MEDICAL RECORD

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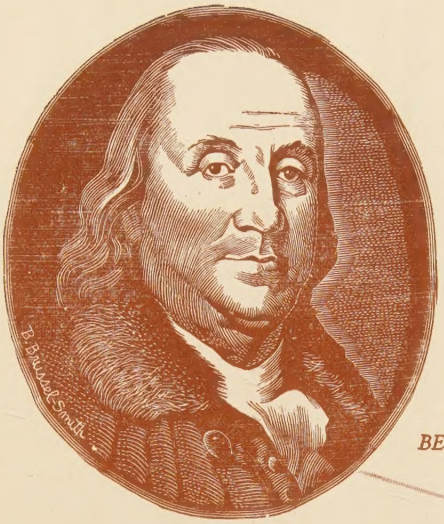
BOOKS must follow sciences, and not sciences books.

—*Bacon*

APRIL 1947

Vol. 160, No. 4



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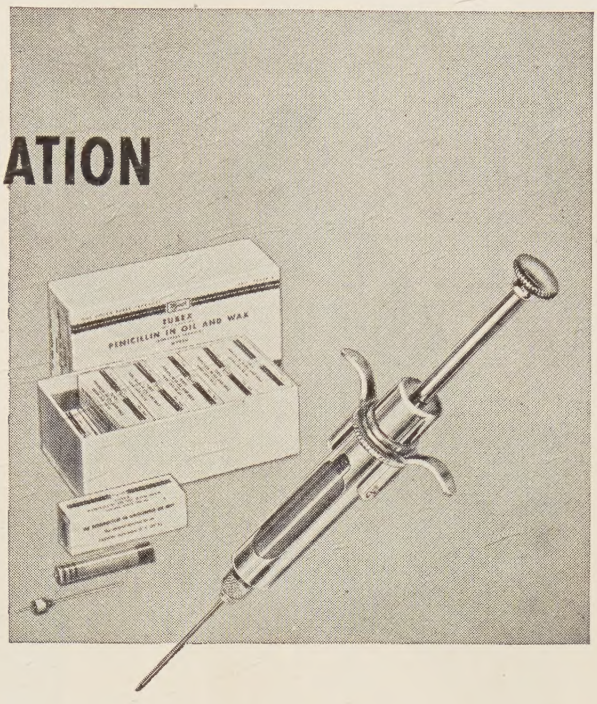

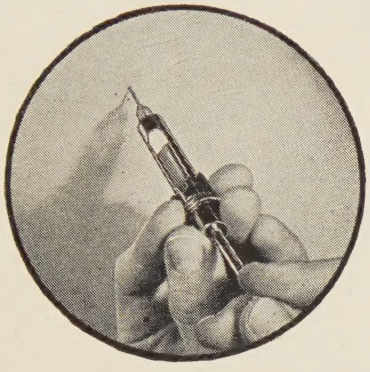

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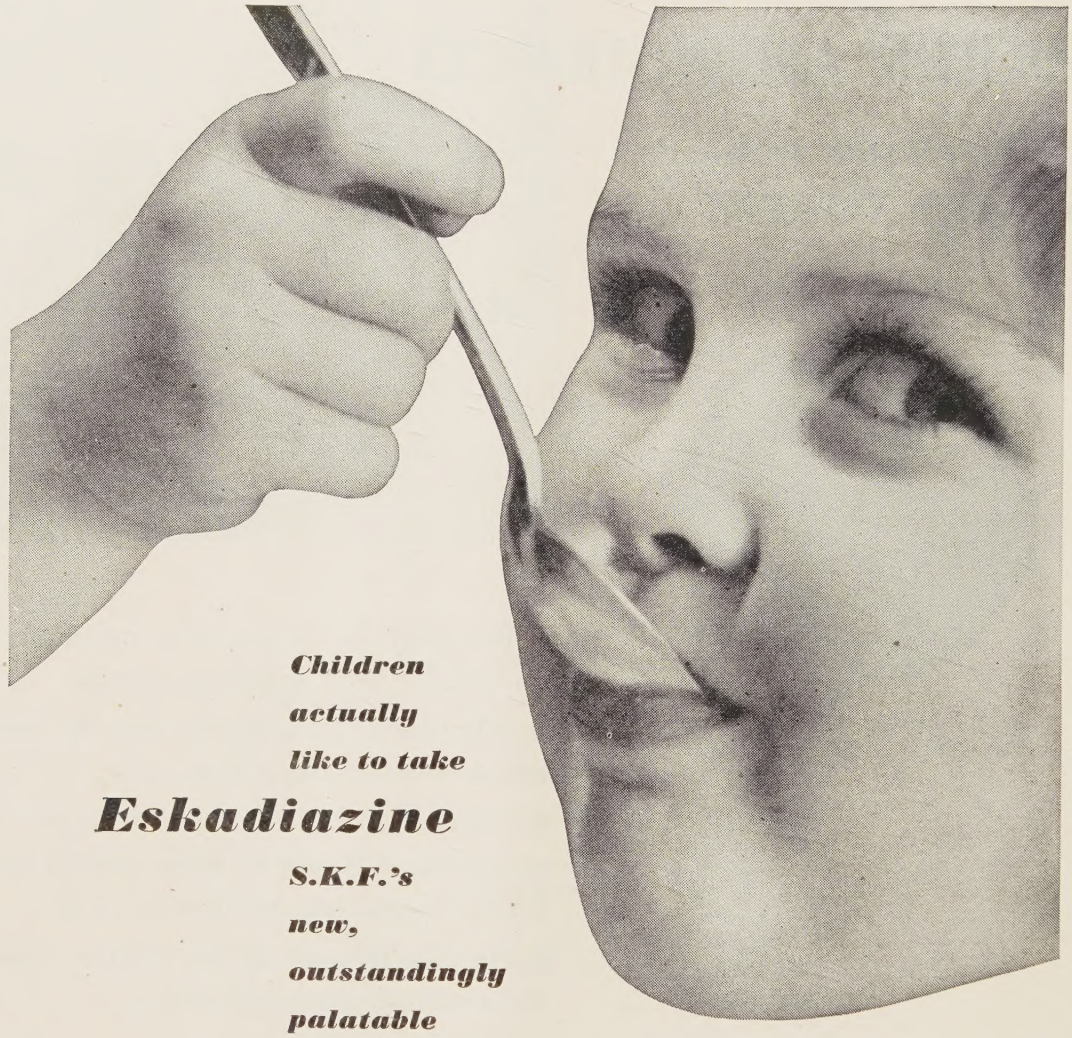

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APRIL, 1947

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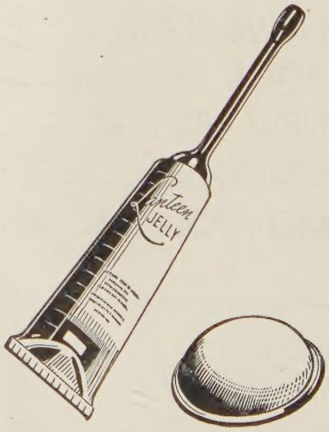

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Betatron Research

Plans have been completed at the National Bureau of Standards for the erection of two betatrons, which will enable scientists to extend research, measurements, and standards development into the 50 and 100 million volt range.

Two immediate problems calling for extensive investigation, are the determination of measurement techniques and the formulation of precautionary principles in the use of the betatron for cancer treatment.

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As a medical tool, the betatron can provide x rays suitable for cancer treatment, under conditions long dreamed of but never realized. With 20-million-volt radiation, it is possible to deliver to a subsurface tumor all the radiation it can stand and yet not seriously jeopardize the skin. Recent research has indicated that the electron beam may also be used directly in therapy, for the beams have the property of passing through the surface and subsurface tissue with negligible absorption. Yet at a controllable depth, all of the energy of the electron beam is given up and absorbed by a tumor.

During the war, the betatron came into limited industrial use for the inspection of heavy metal objects such as guns, shells, and large castings. Using a betatron, the photographic exposures could be made through a foot or more of steel in a matter of seconds, whereas the older methods utilizing radium required hours. The betatron is also an important tool in nuclear or atomic research. Many nuclear transformations are brought about simply by exposing materials to the powerful x ray beam. It is planned to make a systematic study of these transformations, which constitute a phase of atomic research virtually untouched at present. Some of these transformation processes may take place when the human body is exposed to radiation, and it therefore becomes essential that they be thoroughly understood in connection with any biological or medical experiments. An understanding of these processes will also contribute materially to our understanding of the general atomic picture.

Broad cooperative programs of research are planned with the National Cancer Institute and the Carnegie Institution of Washington. The National Cancer Institute has excellent facilities for biological investigation, while the Carnegie Institution has available both a cyclotron and a Van der Graff generator. Acquisition of betatron facilities by the National Bureau of Standards, in conjunction with its established radioactivity and x ray laboratories, will serve to round out the biological, medical, and biophysical radiation facilities of the Washington area, in the high energy radiation range.

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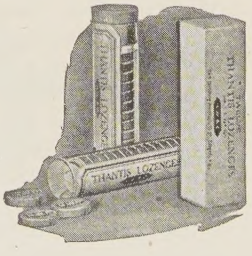

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Open Forum

It's Nerves

T. SWANN HARDING
Falls Church, Va.

Recently, a scientist went up into a cloud and produced a snowstorm, so we can now stop talking about the weather and do something about it. Physicians have been talking, for a good many years, about the manner in which emotional states alter physical ailments, but without doing a great deal about it. Stop a busy, general practitioner or an internist in the staff room, and he'll tell you that eighty-five percent of the cases he sees are mainly "nerves." The record of the armed forces checks this, insofar as noncombat conditions are concerned.

Seventeen years ago, Dr. George S. Stevenson, a New York psychiatrist, told the American Medical Association in Portland, Oregon, that while a pain or another physical ailment may be real enough, an upset emotional state frequently will be found in back of it. He had interviewed one hundred and fifty patients at the Cornell Clinic and had discovered that there was a great deal of difference between the patient's complaint and his motive for coming to the doctor.

The emotional or mental problems lying in back of the pain, or the loss of appetite of which the complaint was made, were often much more serious than the actual physical ailment which, indeed, might be due entirely to the mental or emotional state of the individual! Fear of disease, especially cancer, ranked high among these factors and is still a point not too frequently given adequate consideration by busy doctors. Then there are worries about one's general condition, unstable personality, sex maladjustments, the death of a near relative, identification with the illness of another, careless statements made by physicians during an examination, an unhappy marriage, uncongenial homes and inability to pay the bills.

One nervous woman can give rise to more diverse, undiagnosed and undiagnosable complaints than a whole pathological ward. Moreover, despite what she says and what she feels, the etiology of these conditions, varied as they are, can be sought only in the deeper recesses of her psyche. Also seventeen years ago, Dr. Burrill B. Crohn, The Mount Sinai Hospital, N. Y., told the New York Academy of Medicine that heredity, social conflict, maladjustments to new conditions and plain fatigue formed the background of most gastrointestinal neuroses.

Like Dr. Walter C. Alvarez, he believed that a certain type of hereditary nervous and mental tissue, gave rise in succeeding generations, to the widest possible variety of nervous and mental disorders, ranging from ulcers and high blood pressure to so-called nervous breakdowns and true insanity. The selfishness of children, the problems of the businessman, the worries of romance or economic perplexities can, any one of them, set in motion an intricate series of physiological chain reactions giving rise to remarkable and sometimes incredible symptoms.

Dr. Crohn also attributed more nervous trouble to cigarette smoking and less to alcoholism—even prohibition alcohol—than is customary. He said that the rapidly extending use and wide abuse of the cheaper cigarettes by all classes, help to create highly excitable and nervous states and produce heartburn, hyperacidity, nervous constipation and insomnia; as well as duodenal and gastric ulcers—indirectly that is, and as an adjunct to the nervous condition, not directly as tobacco, *per se*.

Dr. Crohn concluded that to treat such conditions properly, "The trained physician should be the healer, not the inexperienced but loquacious seller of patented ideas. The doctor of tomorrow must have a broader and more general fundamental education; he should be widely traveled. The choice of the best human minds and material should go into the making of the physician."

About the same time, Dr. M. A. Rotchschild, also from The Mt. Sinai Hospital, emphasized to the New York Academy of Medicine the fact that heart "ills" were often imaginary. Many people become convinced that they are victims of organic heart disease when they experience breathlessness, palpitation, exhaustion, or pain in the left side of the chest, when actually they have a symptom complex based on a mental or emotional condition. Yet physicians too infrequently reassure them and too frequently scare them with needless precautions and medication.

Dr. Rotchschild went so far as to coin the term "neurocirculatory asthenia" as descriptive of these symptoms, mainly referable to the nervous and circulatory systems. He declared that cardiac murmurs are present in more than eighty percent of the cases but that they do not necessarily indicate heart disease. He then stated that even serious, organic, cardiac troubles frequently yield sufficiently to advice and treatment so as to enable the patient to live a long and useful life.

Also, as the late Morris R. Cohen said in *Reason and Nature*, "In this connection, it is well to note that the invention of a technical term often creates facts for social science. Certain individuals become introverts when the term is invented, just as many people begin to suffer from a disease the moment they read about it. Psychiatry is full of such technical terms; and if a criminal is rich enough, he generally finds experts to qualify his state of mind with a sufficient number of technical terms to overawe those not used to scrutinizing authorities. The technical terms of natural science are useful, precisely because they carry no aroma of approval or disapproval with them."

There is a lot for the doctor to think about. He has little idea how his carelessly uttered words, often when he is thinking aloud, sink into his patient's consciousness and remain there forever. A chance remark by a physician reading a plate, to the effect that the stomach is low, can be cherished in the mind of that patient for years, and can actually create a pathological condition, though the original

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remark was quite casual and had no pathological implications. It merely implied that the stomach was a bit pelvis-ward when the x ray was taken.

It will be remembered that Dr. A. E. Bennett, head of his own neuropsychiatric research foundation in Omaha's Bishop Clarkson Hospital, in May 1946, called attention to the misdiagnoses collected by such nervously apprehensive patients. The record was alarming and shameful. Patients with functional, nervous, psychoneurotic, psychosomatic or psychotic disorders go the rounds of physicians and quacks, spend all that they have, and are in no way bettered. They constantly discredit the acumen of the physicians.

Dr. Bennett gave a list of one hundred and fifty typical cases who, as a body, had received seven hundred and forty medical and surgical treatments; of this group, two hundred and forty-four had received the latter treatment from various doctors, yet they were, each and every one, dramatically aided by psychiatric treatment after a relatively short period of time. What a diagnostic disgrace or, as Chester A. Riley of the radio would put it, "what a revoltin' development this is."

One woman had a cancer phobia with a passion for orderliness and she was given a diet for arthritis. A vacation was prescribed for a typical manic-depressive. A woman in deep depression was told to forget her ills and take a trip. Many others were operated upon, often several times. Dr. Walter C. Alvarez, hearing this report, agreed and deplored. Medical schools do not sufficiently emphasize psychiatry. Doctors confect diagnoses from the reports of incompetent and inaccurate laboratory technicians and roentgenologists; surgeons make their diagnoses after opening the abdomen. Yet this is 1946, and far too little has been done about it since 1929-30. More has been done about the weather.

In *Science,* October 22, 1937, S. H. Kraines of the National Hospital for Diseases of the Nervous System, London, offered gratis, a psychiatric analysis of current world madness, in terms of diagnoses of the mental states of various nations. The United States, he said, had a typical manic-depressive psychosis with all the proper manifestations, including, in the latter phase, an ebbing of energy, inability to think clearly, dreams, fears and a poor appetite!

France was an elderly, fearful spinster, all right at heart, born after violent labor pains and marked hemorrhages, brilliant, unreliable, and much too dependent on John Bull. Germany was in a depressive phase with marked paranoic symptoms; it felt inadequate, and rationalized, to blame others for its condition. It was eminently logical, capable and energetic, but went into infinitesimal detail to prove its rightness in spite of accusations. Because she combined reason with great energy, Germany was pronounced potentially dangerous!

Italy, said Dr. Kraines, was a feeble-minded person who envied others and tried to be great; hence, trumpeted and acted importantly, but needed a spanking and firm discipline. Japan was small, dynamic and psychopathic, with marked temper outbursts and delusions of grandeur, antagonized others, insisted on its own way and was a victim of a single-idea motivation. China was vastly aged, philosophical, lazy and calm, but perhaps could eventually be aroused into action by the prickings of Japan.

Russia was a physically strong young man just past puberty. Russia showed much adolescent, internal discord, emotional conflict, unsettled purpose, vague ideals and impractical dreams, but age would improve her. England was a solid, settled, conservative businessman who would like things let alone because he was old and had shot his bolt. "The only really normal countries in this world today (1937, *remember*) are Norway, Sweden, Denmark, Holland and Switzerland. Make what you will out of this, but some of it was pretty farsighted.

However, Russia had a lesson for the late Dr. Frankwood E. Williams when he visited there and returned to write "Those Crazy Russians", for the *Survey,* January 1, 1932. The article dealt with mental hygiene in Russia, to which country Dr. Williams journeyed inbued with American ideology and psychology; for here we look upon mental and social hygiene as ministering to the pathological cases. We have created agencies for dealing with the absolute breakdowns caused by our individualistic, capitalistic system of doing things.

Russia attacked the problem from the other end. While Russia had hospitals and clinics, it also had parks of culture and rest, preventoriums and economic security to aid in coping with such conditions. Hence, while psychiatrists might be attached to Russian criminal institutions, the needs were not so urgent as here, simply because cases of mental and nervous strain had been altogether prevented in so many instances.

The schools, social agencies, prisons, clinics and factories did not exist, simply in and of themselves, as entirely separate and autonomous units with entirely distinct and separate problems. They did not have independent programs; the school provided culture, the social agency, relief, the court, justice, the prison, punishment or reform, the clinic, adjustment and the factory, stockings. There were not half a dozen programs where one integrated program would do. This one program sought to make a happy and contented people. Hence, there could be no artificial antagonism between psychiatrist and school principal, prison warden or factory foreman, because each had the same objective in the one whole general program. Thus, mental and nervous health was built up *en masse.* Consequently, fewer needed to be saved, regenerated or brought back to health.

Whatever the conditions may now be in the U.S.S.R., there may be a lesson for us in the approach and method of the early thirties.
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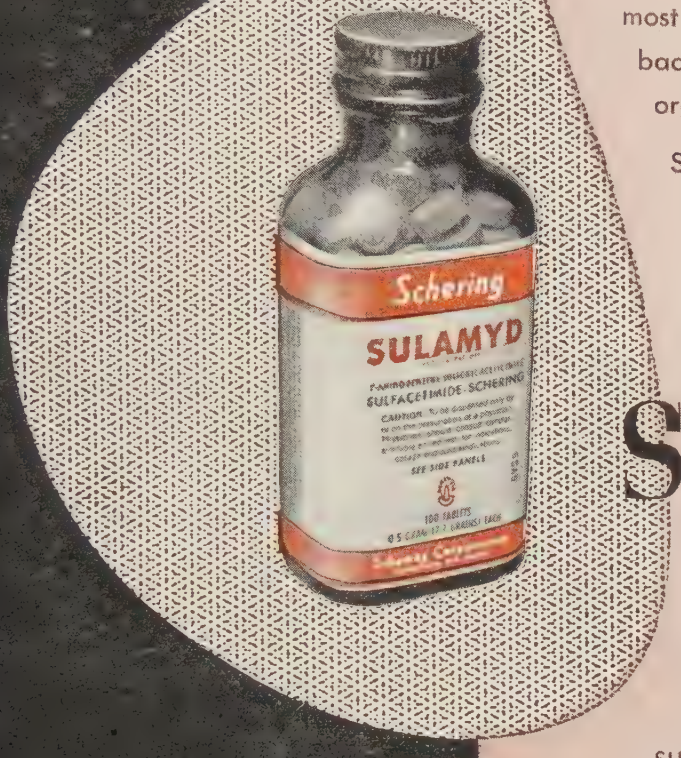

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Importance of Scientific Libraries

Dr. Theodore G. Klumpp, president of the Winthrop Chemical Company, Inc., Rensselaer, N.Y., declared recently at the New York Academy of Medicine, now observing its one hundredth anniversary, that medical science and its related industries today stand in the forefront of "an upward surge of activity" that represents "perhaps the greatest scientific renaissance the world has ever seen".

Referring to the academy's own library of 225,000 volumes and other growing collections of scientific documents, Dr. Klumpp emphasized the importance of scientific librarians, or, as he termed them, "arm-chair researchers" to the rapid progress being made by scientists today.

Dr. Klumpp said that the development of penicillin, new antimalarials and the atomic bomb, were only a few of the achievements which were made possible in a phenomenally brief period of time through the National Research Council and its various committees. He added that not only was there integrated investigations in many directions at one time, but new information was immediately available to all other workers. Thus, the council served as a central clearing house for information.

Dr. Klumpp maintained that the range of usefulness of technical libraries can be further expanded, but insisted that greater care must be taken in the development and education of the librarians. He pointed out the great store of technical and scientific facts being assembled, estimating that today, about 1,500,000 different scientific and technical articles are published yearly in scientific periodicals throughout the world. The proper use of available material constitutes the greatest problem.

As an example of how the pharmaceutical industry uses scientific libraries, Dr. Klumpp cited the brochures published by drug houses, which he said are widely read and used by physicians to keep themselves informed concerning new drugs and therapeutics in general.

Dr. Klumpp concluded by asserting that rather than more and better routine librarians, what was needed was a new kind of investigator, one that might be called a "library-scientist"—"a happy combination of research worker and librarian."

"It would be his function to serve as library consultant to the laboratory workers", he explained. "While it would be fatal for the laboratory worker to divorce himself from the library, competent an expert help would, as it does now in some cases, greatly accelerate the pace of his work."

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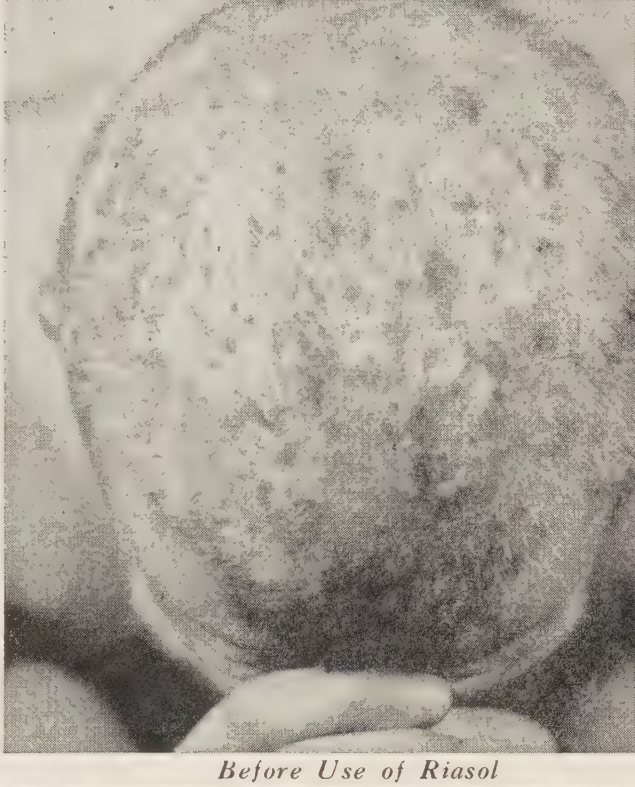

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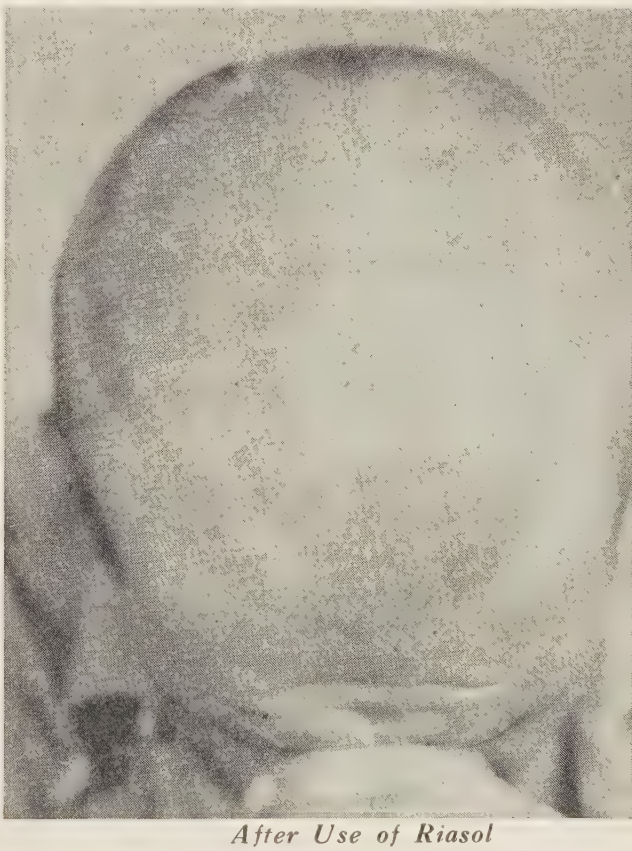

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War Experiences in Preventive Medicine

Colonel Tom F. Whayne, MC, USA, deputy chief of the preventive medicine division of the Office of The Surgeon General, in an address before the Kiwanis Club in Pittsburgh, Pa., on February 27, told of the army's war experiences in preventive medicine. He reviewed the development of the Medical Intelligence Division and its work in collecting detailed medical and sanitary data on foreign areas, and spoke of the specific preventive medicine problems encountered in the European Theater of Operations where he served with the 12th Army Group Headquarters and later in Headquarters ETO.

No significant problems were encountered in the ETO on the assault landing at D-Day and for months thereafter. As war progressed, preventive medicine activities consisted largely of advising on problems as they arose in the field, coordinating the problems of the armies and the theater, and advancing plans for the handling of the German civil population in the event of major epidemics. The first preventive medicine problem presented itself in November 1944, when trenchfoot was reported. For a period the incidence rose steadily and was controlled only through the conjoined efforts on the part of command, the quartermaster, the surgeon, and the individual soldier himself. Another challenge successfully met, was that of louse-borne typhus fever. Conditions were favorable to its spread by the thousands of displaced persons and refugees living without adequate sanitary facilities. Such conditions gave the army's control plans a real test and future possible outbreaks were faced with considerably more confidence. Problems after VE-Day primarily concerned public health of the German civilian population and the adaptation of army preventive medicine policies and procedures to protection of the health of our soldiers under conditions of the occupation.

ETO's problems paralleled in many respects those of other theaters. Colonel Whayne pointed to the army's success as being reflected in the overall death rate from disease of 0.6 per thousand as compared to 16.5 in World War I, and mentioned DDT, atabrine, and later other antimalarials, successful immunizing agents against tetanus, yellow fever, typhus fever, influenza and Japanese B. encephalitis, malaria control organization and techniques, field water purification methods and the improved diet and nutrition of our soldiers as some of the major developments in preventive medicine to come out of the war. In addition the great strides made by the psychiatrists in preventive psychiatry are to be considered. These advances plus many others in other branches of medicine are now improving the health and well-being of civilians both in this country and abroad. None of this record would have been possible without the help of the civilian medical profession and their doctors in uniform according to Colonel Whayne.

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A limited supply of anti-Hemophilus influenzae type b serum, prepared and tested by the Division of Laboratories and Research is available for distribution to physicians for the treatment of cases of H. influenzae type b meningitis, according to *Health News*, 24:3, 1947.

The serum is produced by the immunization of rabbits with formalin-killed suspensions of strains of H. influenzae type b microorganisms. The available data in the literature indicate that the administration of the serum together with sulfadiazine may effect complete recovery in a relatively large percentage of cases. Early treatment is highly important but satisfactory results have followed serum therapy in refractory chronic forms of the disease. Recently, reports have appeared indicating favorable results from the use of streptomycin.

The serum is distributed directly from the Division of Laboratories and Research, Albany, to which requests should be sent by telephone or telegraph. Each package of serum contains approximately 25 mg. of antibody nitrogen, on which the dosage is based.

It is naturally important that the etiological agent be established before serum is administered. Although desirable, it is not absolutely essential to determine the type since up to the present, approximately 90 percent of all cases of meningitis due to Hemophilus influenzae are type b infections.

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The Winthrop Chemical Company, Inc., Rensselaer, N.Y., has recently opened a new, four-story brick and glass, windowless, germ and dust-proof laboratory plant designed to run under constant scientific control for the preparation of injectible medicines in ampuls.

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The most unusual feature is the unique system of dedusting passageways in the basement. Before entering the main building where the medicines are made, all employees and visitors must walk through one of two narrow passages lined with double dedusting blowing and suction units which are designed to remove lint and dust from their clothing.

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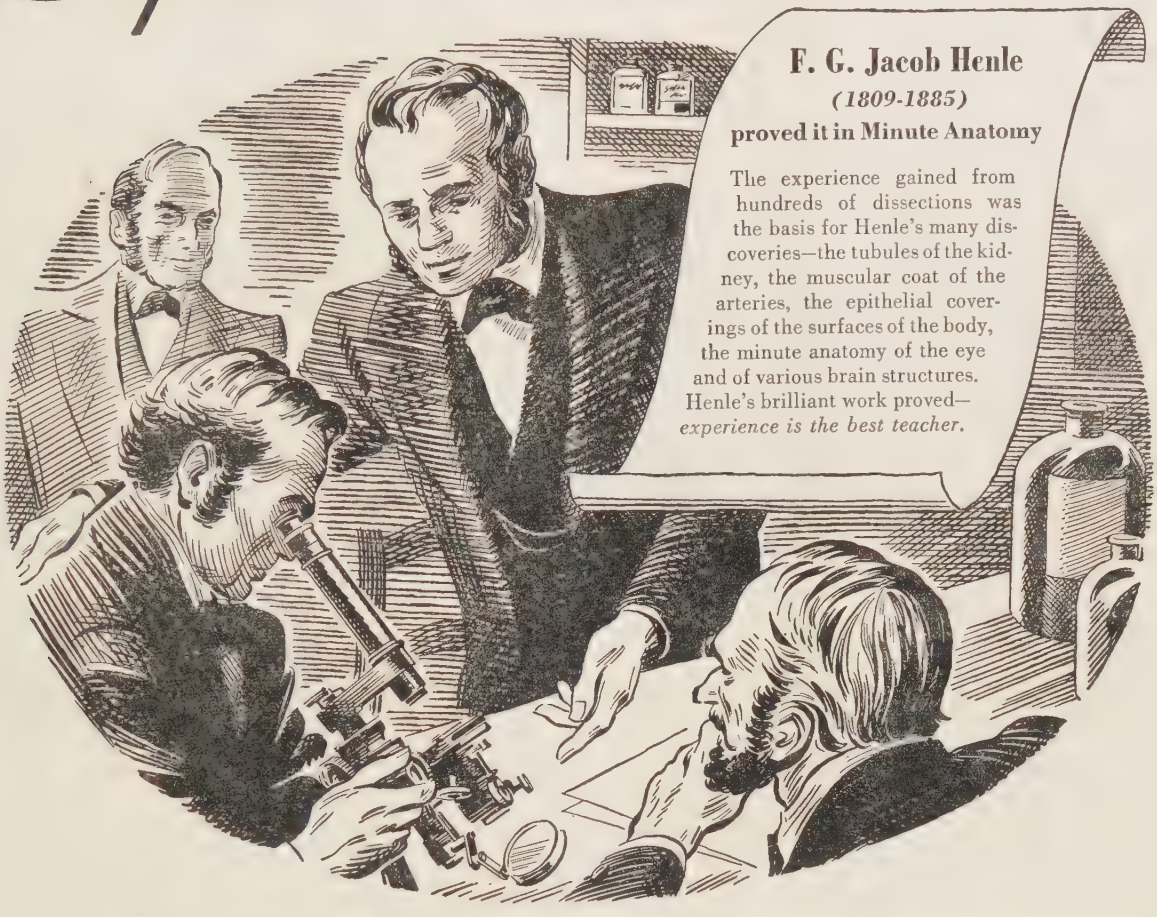
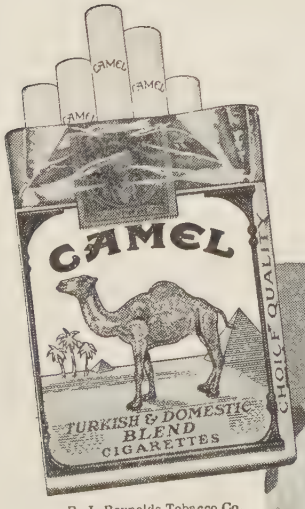


F. G. Jacob Henle
(1809-1885)
proved it in Minute Anatomy

The experience gained from hundreds of dissections was the basis for Henle's many discoveries—the tubules of the kidney, the muscular coat of the arteries, the epithelial coverings of the surfaces of the body, the minute anatomy of the eye and of various brain structures. Henle's brilliant work proved—*experience is the best teacher.*

Yes, and experience is the best teacher in smoking too!



THE wartime cigarette shortage was a real experience to smokers. Whether they intended to or not, people found themselves smoking many different brands, learning by actual experience the differences in cigarette quality.

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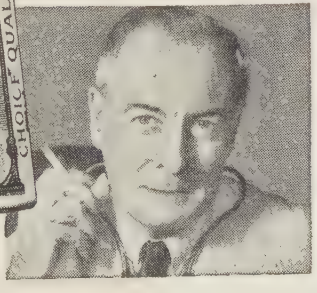

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Critique

Blood in cancer H. Millet reported, in the May, 1929 issue of the *Journal of Biological Chemistry*, on the reaction of the blood of cancerous and healthy individuals and found the pH value to be almost identical, 7.34.

Rheumatic weather predictions Reporting in the June 15, 1929 issue of the *J.A.M.A.*, Rentschler, Vanzant and Rowntree said they had studied 367 arthritic patients for a year and found that there was a positive correlation between their curve of pain and the barometric pressure. The correlation was undemonstrable only seven percent of the time; more than ninety percent of the time, there was a direct relationship between an increase in pain and the presence of storms. The results obtained with humidity, temperature and atmospheric electricity were inconclusive.

Before phenothiazine On June 18, 1929, the Food and Drug Administration announced that the market was full of worm expellers, whereas no drug or mixture of drugs then known, was a vermifuge for all types of animal and poultry worms. Many drugs sold as anthelmintics had no such action at all, and some were found to consist of ninety-five percent water plus a little gum or cod liver oil. The same was true of many socalled hog cholera remedies, a condition for which no drug cure existed. One socalled disease-preventive worm destroyer, consisted of ninety percent common salt, plus small amounts of iron oxide, calcium carbonate, sodium sulfate and carbonate. The animals were getting fooled and so were the farmers.

Good protein A year or so ago a scientist at the Pennsylvania State College told the writer that the highly fertilized grass around golf putting greens contained protein as good as that contained in milk, for the promotion of growth in animals—or in turkeys in this case—and they are more of a grazing animal than most of us think. Dr. Breese Jones and associates of the Bureau of Human Nutrition and Home Economics, have demonstrated that the protein of wheat and corn germs is also excellent, the former being even better than the latter, and also equal to the animal protein in nonfat dried milk for promoting growth in rats. These germ proteins come mighty close to doing as good a job of muscle building as would be expected from eggs and meat. America is liberally supplied with large quantities of high-quality plant protein, not to mention the excellent protein in skimmilk, far too much of which has, for too long a period of time, gone to feed domestic animals rather than human beings.

Dietetic fads? In the May 1929 issue of *International Medical Digest*, it was remarked that low-protein diets for high blood pressure or nephritis were commonly used, although a decade earlier, A. A. Epstein had advocated high-protein diets in the case of nephritis. Later, other workers had shown that a diet containing adequate, but not excessive protein, was best if the patient was to be sustained throughout a wasting disease. (*Jour. Exper. Med.* 39:887.) Typhoid patients were starved for years, for fear that fecal concretions might perforate inflammed patches. Such restricted dietetic management was said to have prevailed for an unnecessarily long time in typhoid fever, until incontrovertible evidence accumulated to indicate that many patients might have recovered, had their resistance not been sapped by prolonged starvation. In 1929 the *bete noir* was sugar or excessive carbohydrates. The sylphlike, or barberpole figure, was fashionable, and the advertising copy writer decried carbohydrates, meanwhile manufacturing the statement that science backed up his facts. Our opinions are colored by our tastes, as in the matter of tobacco smoking which has not yet been fully proved harmful or beneficial, and sugar is probably more necessary and less harmful than the tobacco weed, or is it?

Abstracting the literature A research worker of our acquaintance decided that before he tackled a certain problem, he would abstract the literature. He started to do that, and two years later his supervisor finding him still at it, asked him when he ever expected to get to work in the laboratory. It developed that some of his "abstracts" turned out to be longer than the articles he was condensing, and that the "literature" was appearing much faster than he could possibly abstract it. This reminded us of Laurence Sterne who, in paragraph 5, Chapter 13, Book IV of *Tristam Shandy* wrote: "I am this month a whole year older than I was this time twelve-month; and having got, as you perceive, almost into the middle of my fourth volume—and no further than to my first day's life—'tis demonstrative that I have three hundred and sixty-four days more life to write just now, than when I first set out; so that instead of advancing, as a common writer, in my work with what I have been doing at it—on the contrary, I am just thrown so many volumes back—was every day of my life so busy a day as this—And why not?—and the transactions and opinions of it to take up so much description—And for what reason should they be cut short, as at this rate I should live just three hundred and sixty-four times faster than I should write—It must follow, an' please your worships, that the more I write, the more I shall have to write—and consequently the more your worships will have to read."

The Critic

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MELANOMA*

WILLIAM L. CORCORAN, M.D.
New York, N.Y.

Melanoma is a tumor which contains varying degrees of a metabolic byproduct known as melanin. The dynamics of this type of a tissue change are variable and important, because of the possible widespread liability which may be exercised over a wide range of pathological changes, varying from the most innocent looking blemish, up to and including an intense degree of malignancy.

Recalling ones lectures in embryology, histology and pathology, the possible danger of the body pigment was always stressed. The dermatologist observes the disastrous results brought about from improper treatment of what appeared to be a minor skin alteration. The American Society for the Control of Cancer in its annual statement to the public as part of its educational program, always places stress upon the correct consideration of such conditions as the "pigmented mole". The disasters wrought by cultists are never recorded.

Virchow considered melanoma to be both a sarcomatous and carcinomatous type of growth, the former exhibiting a diffuse structure of spindle cells, the latter an alveolar structure. He employed the term melanoma for the entire group.

Two different case reports of melanoma are presented respectively, in order to embrace the time honored descriptive classification of melanoma as designed by Virchow, and also with an endeavor to illustrate the research of material which deals with the histopathological manifestations of this tumor.

Case Reports

Melanosarcoma, with a prolonged interval between the time of operation and the onset of metastasis, is a matter of record. The literature reveals but few cases of a lengthy intermission, a fourteen year period being recorded as outstanding. This particular presentation is that of an orbital melanosarcoma, the interval being one of sixteen years, which is somewhat unusual.

CASE I.—Mrs. K. K., a widow, aged eighty-two years, was admitted to the Saint Clare's Hospital, April 3, 1944. Case No. 38447. Working diagnosis—Tumor, sarcoma (metastatic) of the right hip area. Discharged—April 18, 1944. Improved. Final diagnosis—Postoperative orbital melanosarcoma with multiple metastasis.

This patient is now normally active for a person of her years and is independent in caring for her personal needs. She attends church regularly and participates in the direction of her household affairs.

In the year 1924, at the age of sixty-two, she was confronted with a major problem regarding her left eye. The condition was eventually diagnosed, after total blindness had set in, as one which necessitated excision of the eye. The pathological report of this surgery was that of a sarcoma. The patient was again referred to the hospital, December 3, 1943, at which time her chief complaint was that of a tumor mass, about the size of a grapefruit. This mass extended outward from the soft tissue about the right lateral hip, just above the acetabular area, subjacent to the overlying skin and was freely moveable upon its broad base. It had a definite firmness throughout except over the fundus where a circumscribed area about seven cm. in diameter underlying a very thinned-out layer of skin, gave the appearance of a possible hemorrhagic rupture. The onset of this formation was preceded by the history of a trauma to this particular area three years previously when the patient accidentally struck herself against a table. About one year later, a lump formed which had gradually increased in size.

The history and examination also revealed the presence of a complicating left inguinal hernia, which had been quite satisfactorily controlled (fortunately) over a period of thirty years by the wearing of a truss. The effectiveness of this appliance was now definitely handicapped by the tumor mass, which not only distorted the truss but was undergoing a chronic form of irritation by the belt encirclement. This difficulty was met with the prescribing of an abdominal belt that had an encorporated truss egg and spring, so as to support the left inguinal protrusion. Anchorage was obtained by arranging for a window which was cut posteriorly and to the right, thereby permitting the tumor mass to make its exit and not be subjected to any pressure factor.

*Presented at the staff conference of Saint Clare's Hospital, New York, November 6, 1945.

The plan of treatment was now formulated on very conservative lines; the impression being that the possibility of a hemorrhagic change of this tumor might be curtailed by a careful sclerosing course of H. V. X. therapy. After a consultation with Dr. John Remer, this course was decided upon and the patient was immediately admitted to Saint Clare's Hospital. A series of suberythema exposures was given and the course was completed without the slightest skin damage. At the end of two months, the desired sclerosing effect was apparent. During this period, however, the histogenesis of this problem was undergoing activity. According to the late Dr. Ewing, the diagnosis of sarcoma of the orbit may readily have been one of melanosarcoma.

FIG. 1.—The vacated orbital cavity following surgical extirpation of the orbit for melano-scarcoma. The cosmetic effect was subsequently erradicated by an artificial replacement.

Two months after the H. V. X. course was completed, the area just below the left inguinal external canal, showed a venous engorgement about the size of a twenty-five cent piece; this was soon after surmounted by a blackened area which subsequently became ulcerated and discharged a lampblack type of material. In a short time, a venouslike colored swelling, about the size of a hickory nut, occurred in the mid-third of the lateral right thigh, and a bluish colored mass about the size of a green pea presented itself over the mid-third of the lateral right arm.

After a period of one month, the melanotic process in the left inguinal area ceased to discharge, the ulcer crater filled in and has since remained quiescent. Upon the patient's discharge from Saint Clare's Hospital, she returned home and soon thereafter developed a most diffuse purpura hemorrhagica. This discoloration subsided at the end of ten days.

In addition to the metastatic areas as described, there subsequently appeared numerous scattered metastatic tumors, subjacent to the skin, the latter being attached to the respective nodes in varying degrees. These formations made their appearance throughout the posterior neck, the trunk and the extremities, including the axillae; the scalp, face, hands and feet being avoided. However, the distant interphalangeal joints of the index and median fingers of the right hand became painful and elastic-like in function. An x ray of the hand revealed no bone or joint changes, as well as an absence of roentgen changes in the lungs and osseous system.

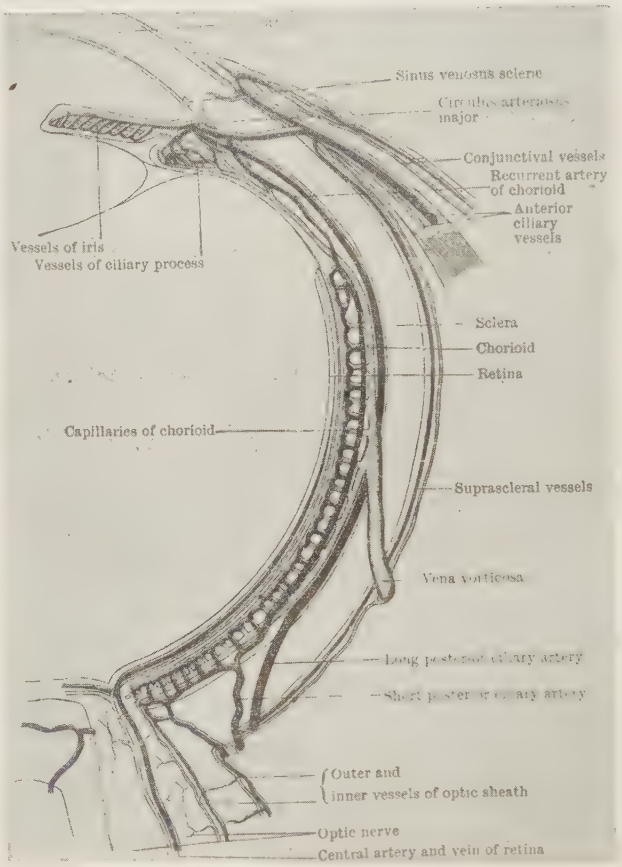

FIG. 2.—The anatomical vascular distribution of the orbit, as considered in the four phase progress of orbital melanoma.

The processes of metatasis varied in size as within the range of a pea to an egg. The color varied from a blue red to a venous blue to a black. The onset of each formation was preceded by pain, as if from a localized phlebitis, the pain reaching its height, continued for a short period and thereafter the formation developed a degree of tenderness which varied according to its location and the degree of external pressure subjugation.

The patient subsequently experienced a pronounced phase of gastric irritability, and it was feared that a possible liver involvement might complicate her condition, but with the use of antispasmodic sedation this syndrome was corrected.

The early removal of the left eye in this case was definitely indicated, since metastasis is known to occur in fifty percent of the cases.

The tumor develops frequently between the ages of fifty and sixty, though cases of persons as young as fourteen years of age have been recorded. This

neoplasm begins as a flat, localized swelling of the choroid, which develops most commonly in the posterior portion of this membrane; it soon becomes more spherical and frequently penetrates Bruch's membrane, assuming a mushroom shape. After the onset of establishment, progress of orbital melanoma is judged according to the following four phases of symptoms and signs:

1. *Quiet period.*—Defective vision with metamorphopsia may ensue, owing to a deformation of the retina. Ophthalmoscopic examination may reveal that a portion of the retina is pushed forward, and beneath it, may be seen a brownish mass covered by irregular choroidal vessels. Large areas of the retina may become detached by serous exudation from the choroid, due to the growth and cause vascular engorgement. Diagnosis at this period is extremely important but may be very difficult.

2. *Glaucomatous period.*—The symptoms of glaucoma supervene, thus an ophthalmoscopic examination is impossible due to the hazy cornea. Reliance must be placed on the history for the diagnosis. If blindness occurs before the onset of the glaucomatous symptoms, strong suspicion of a growth is indicated.

In a recent survey of cases of acute glaucoma, it was found that no less than ten percent were due to sarcoma of the choroid. This possibility should be borne in mind in all cases of acute glaucoma.

3. *Extra ocular period.*—In this phase, either the sclera will rupture, or permeation will occur along the walls of the blood vessels penetrating the sclera.

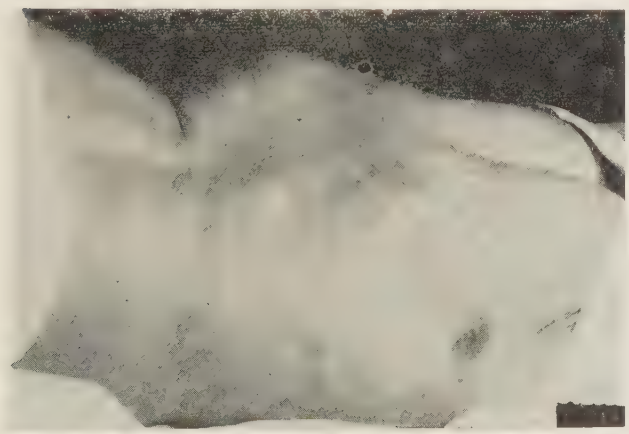

Fig. 3.—The first metastatic tumor mass protruding from the soft tissues about the right lateral hip, just above the acetabular area.

4. *Period of metastasis.*—This period need not be delayed, as previously mentioned. Since these growths contain numerous blood spaces formed by a single layer of endothelium, it is not surprising that the emboli of malignant cells can pass from the spaces into the general circulation.

Case II.—Mr. F. D., a bookkeeper, aged fifty-eight years, was admitted to the Saint Clare's Hospital February 12, 1935. Case No. 19226. Diagnosis on admission—Hypernephroma of the left kidney. Pigmented neavi. Discharged—March 17, 1935. Diagnosis on discharge—Hypernephroma of the left kidney, which was improved by x ray therapy. Pigmented neavi (benign). Surgical resection was necessary for diagnosis.

Fig. 4.—The second matastatic tumor in the series of multiple formations which were soon to develop. The process also displays the surmounted ulcer crater with its discharging sepia. The latter soiling of the neighboring skin surface, displayed at the time of redressing, indicates the character of true melanin.

This case offers a classical description of the cutaneous mole. Of the multiple formations scattered throughout the back, three warty tumors were selected from different locals and surgically removed. The selection was based on their degree of offensiveness and for the purpose of determining their malignant possibilities, along with the paramount malignant involvement of the left kidney; the latter, miraculously responding to H. V. X. therapy. The following pathological report will suffice for their description:

Nature of specimen: Pigmented moles (three).

Gross: Three pieces of tissue, measuring about 1½ x 1, 1 x ½, ½ x 6m. They were cauliflower-like in appearance, brownish in color, with a firm grayish base.

Microscopic: There was marked cornification of the stratified epithelial layers. There were prolonged finger-like projections. The corium was filled with small cells which were darkly pigmented; these were neavus cells.

Diagnosis: Pigmented neavi, benign.

Pigmentation of Melanoma

Pigment.—The pigment deposit in nevi, appeared in the swollen basal cell of the mole, as minute yellowish granules. With the increased proliferation of the epithelial cells, the foci of the new cells demonstrated an increase in the amount of pigment. Individual cells within the groups, may develop a tremendous amount of the material, increase in size and shape and become elongated. Multipolar chromatophores are usually present in pigmented moles which are located beneath the epidermis; they pass

between the basal cells and at times are found in the malpigian layer. At times, they are absent due to the yield of their pigment content to the epithelium. As the cell growth continues, the pigment may appear in huge quantities and evidences of an intranuclear formation of pigment appears which becomes widely scattered in neighboring cells and tissues. Bohn believed that this pigment was a biological entity with nuclear properties. Along with nucleolar deposits which may become excessive, an escape in the form of pigment has been noted in the cytoplasm. This latter determination was stated by Rossle, who concluded that the production of pigment reduced the regenerative ability of the cell.

Pigment dissemination to neighboring cells may be excessive, and in metastatic nodules the stroma may be entirely invaded while the tumor cells retain only a scant or negative content. This situation is considered as a result of the free pigment possessing a phagocytic factor, or the assumption that normal cells produce pigment, or as a result of the absorption of extravasated blood. The advanced stage of the disease reveals streaks of pigment extending from the skin tumor deposits in the serous membranes; plus the presence of granular deposits within the vascular endothelium of many different organs, as well as melanuria and melanemia. A diffuse pigmentation in the cerebrum of the cerebral capillaries without a tumor formation has been recorded by Katsurada. The involvement of the lymph node with excessive pigmentation, formulated Gerke's opinion that some agent of the tumor cell causes the tissue cells to bring about pigment production. It has been calculated that as much as 500 gm. of pigment may be formed in a single case.

The great majority of investigators believe that the pigment of melanoma is a special product of metabolism. A close parallel exists between the physiological formation of the pigments found in Addison's Disease and in the melanomas. The perivascular location of so many of the chromatophores may indicate a faculty for nutrition, which may account for the splendid nourishment and growth of this special tumor cell.

Chemical reaction.—The microchemical reaction of the pigment melanin, fosters the metabolic factor of its origin. The early mole fails to give a positive Pearl's reaction, which is a test for free iron, but in more advanced cases the reaction is positive. The pigment granules stain a blackish tint with osmic acid.

Dopa-oxidase, an extract of the broad bean which is said to contain dioxyphenylalanine, demonstrates a reaction in the melanomas. When it is applied to the skin, the stellate cells of Langerhans and the chromatophores respond in the pigmented and non-pigmented changes. It reveals the presence of melanogen, a fore-runner of melanin, and it produces no reaction in the intensely pigmented changes. This test of Block's, when utilized in the fetal epidermis, shows that the pigment cells are inwandering chromatophore cells and that the tactile cells (Merkel-Ranoier) are derived from them.

The chemistry of the body pigment is also utilized in a revealing manner. The black pigment normally found in the hair, choroid, melanotic tumors and the sepia factor known as melanin, usually contains C, H, N, while S is by no means constant. The element C, H, and N are found in the proportion 1: 5: 5. The element Fe is not always present, and it has thus been concluded that melanin is usually free from S and Fe but has a definite affinity to unite with these elements. It can be slowly dissolved with strong alkalies; it may be bleached with H_2O_2, choline, and by soaking in $KMnO_4$ (10 percent solution), followed by the utilization of dilute H_2SO_4.

Melanin from a tumor growth, when it has been healed with a strong alkali, yields indol, skatol and volatile fatty acids which produce melanic acid (Nencki) when treated with FeCL. Melanin when subjected to dry heat gives off pyrrhol.

Histology

The tissue structures of the pigmented mole vary in the different stages of their natural history. In the congenital mole of infants and young children, a process is found which is limited to the epidermis and the immediate subjacent derma. The cells reveal a clearing of the cytoplasm, a swelling of the cell body and hyperchromatic changes of the nuclei in the foci of the cells in the deeper layers of the epidermis. Similar changes take place in the underlying derma, occuring as cross sections of the columns of cells that appear to have undergone a downward displacement; these are located below the basal epithelium. Such changes may become quite extensive about the basal layer as certain single cells appear to break off and penetrate the derma. (Epithelium of hair follicles and sweat glands are often incorporated.) The cells may or may not be pigmented. The pigment change usually appears in all of the cells, or it may be confined to single elongated polyhedral or multipolar epithelial cells; the latter may be the chief type of pigment bearer, hence the origin of pigment may be followed.

As the proliferation of these cells becomes associated with more displacement, they may undergo a metamorphosis and thereby lose the polyonal form, spines and fibrils changing into round, coherent, clear staining cells with dense nuclei, lying in alveolar groups or elongated columns. Depigmentation occurs as the cells become isolated, and it is practically complete when the cells become fixed in the fibrous tissue matrix. Pigment may then be found in the fibrous tissue of the surrounding loose connective tissue cells and in the walls of the capillaries.

Ewing now calls attention to the adverse views of Ribbert, in regard to the epithelial origin of the nevus cells. The latter considered the ability of the mesoblastic chromatophore, on the basis of observed strings of cords, of clear, round cells deposited in cellular fibrotic tissue. Some blood and lymph vessels pass through the involved structure, but Ewing never determined a connection between the endothelium and adult nevus cells. The cords of the

cells present no connection with the epidermis, as the underlying cells assume a spindle form within the fibrous tissue and fine fibrils extend between the cellular fibrosis. The basal epithelium undergoes edema and separation. The adult mole grows in a slow but progressive manner, nor does the adult type reveal a clear cytoplasm as in the congenital change (dormant). Small alveoli are present in clusters, while sometimes there is an extensive change of the enlarged cytoplasmic cells which have a definite nuclei and which are vesicular and hyperchromatic. Again in the adult quiescent mole, pigment cells are few in number and show their wandering ability.

In the congenital mole, the blood and lymph vessels play a passive part. The endothelium is usually normal, although sometimes hypertrophic, and the lumen is patent. Pigment cells may be present about the vessels and the endothelium may be laden with pigment. The advancing epithelium seems to avoid the lumen and the perivascular areas. The nevus cells seem to be separate from the endothelium in the congenital mole, while the pigmented moles may incorporate the capillary nevi, capillary angioma or endothelioma. The distinction between the endothelium and the epithelium is pronounced.

As has been previously stated, the character of the pigmented mole depends on its stage of development. In the adult, many of these tissue changes become papillary or warty, and in such formations these changes are found in the periphery of the cell clusters. The basal cells may be swollen and pigmented, while the adult pigment mole may undergo a fibrous change or a malignant alteration.

Fibrous change.—The fibrous change is demonstrated by the existence of a large amount of new, fibrous tissue formation, which engulfs the normal cellular areas, sweat glands, sebaceous glands and hair follicles; moreover, a mucinous deposit may exist. Many adult moles undergo fibromatous and mulluscoid degeneration. The nevus cells are subjected to pressure changes and atrophy and finally disappear. Pigmentation is scanty, and at times entirely absent. The mole may be elongated or pedunculated, while the fat lobules become considerably enlarged.

Malignant change.—The malignant change is usually present, via microscopical signs of active growth and increased vascularity. The hypertrophy demonstrates a nuclear hyperchromatism, as well as some mitotic figures. Such changes may occur spontaneously, again after trauma and still again after incomplete surgical removal. Certain moles which appear to present an innocent histology, and at the same time produce secondary tumor formations, are known to exist and they establish a possible potential danger of this tumor. Because of their vascularity, trauma and repeated irritations may create a malignancy. Deep pigmentation is a definite constituent of the malignant mole, and it increases with the degree of activity. Of course, exceptions to the influence of pigmentation should always be noted. The proliferation of the previously isolated cells brings about the establishment of growth. As has been previously stated, the transportation of melanoma is either by way of the lymphatic or blood vascular system. In the event of lymphatic transport, the regional nodes are involved and the advance may be slow. Repeated surgical extirpation may result in a cure, or prolong the interval between the onset and termination. A hyperplastic lymphadenitis may procede the nodal involvement. A general metastasis is existent when the blood stream route is elected.

The manner of extension cannot accurately be determined histologically; however, the clustering of tumor cells about the blood vessels suggest a blood stream invasion. Dilated blood sinuses, when present, offer ready access to the blood vascular system. The anaplasia of the tumor cells may be epitheloid in character, or multiply in the form of indifferent round cells.

A metastatic tumor structure is also characterized by variations. The tumor change of metastasis may be demonstrated as an alveolar or diffuse carcinoma, a large, spindle-celled sarcoma, or as a perithelioma or a lymphosarcoma. Clusters of large, round or polyhedral, clear cells are often present in cutaneous metastasis; with or without pigment, and they promptly reveal their epithelial origin. The metastatic growth may be the first sign of another placed malignant mole. Metastatic processes first appear to be surrounded by a hemorrhagic infiltration coming from dilated blood vessels, but the hemorrhage may be absorbed, and a cicatrix formation produced, which in turn can diminish the size of the process. Many areas of pigmentation, in the form of minute deposits, may appear in the skin, mucous and serous membranes. The amount of pigment may be tremendous, while the number of tumor cells may be scant; thus, a suggestion of pigment emboli presents itself. This factor, that pigment material may stimulate cell changes, is without definite proof, however, there is no specific reason to explain the formation of numerous metastatic tumors which arise from minute primary tumors. The pigmentation of metastatic tumors is also variable. In certain tumors the amount is excessive, while in others only a portion of the metastatic process will possess pigment; again, it may be scant and even absent. There is no permanent index of pigment content, because intense pigment primary tumors may give rise to secondary growths which are entirely pigment free. Some of the most virulent types of tissue change are pigment free. At times, the pigment is found only within large fusiform cells within the connective tissue and about the growth. The pigment may also be so pronounced throughout the tumor, that cystic formations appear which contain a black fluid.

Metastatic involvement of the organs may be a predominately spindle-cell formation of a sarcoma, and again small polyhedral cells may establish the picture of alveolar carcinoma. In large areas of

nonpigmented tumors small foci may contain pigmented cells. The equation of pigment is a very delicate balance.

Pathology

Melanin is known to be a darkened pigment existing in the body makeup. It is normally present in the structure of the hair, eyes and skin, and to repeat, it is considered as an intracellular by-product of the metabolism.

The mesoblastic (origin) chromatophore cells, which are embryonal, are capable of inwandering. Such an ability brings forth the theory of their probable origin from the tactile cells which are located in the epidermis; also from the nerve cells within the derma. Such types of cells appear to be a part of the sensory nerves of the skin. These fundamental elements of the body structure containing melanin pigment, serve as a neurogenic control in this tumor. Such influences may bring about a change of the intracellular potential, plus the effects of the general body metabolism. This permits the early melanotic invasion and transportation by the lymphatic system, so that a metastasis, in a disguised manner, is established sometime before the bloodstream is elected for a more outright dissemination, thus increasing the degree of malignancy.

Melanoma is located chiefly in the skin, and the choroid coat of the eye (it infrequently occurs in the meninges, breast, rectum, adrenal gland and other organs).

In the skin, the origin of melanoma is associated with a congenital abnormality which comprises an overgrowth and pigmentation of the epidermis. It is also associated with the hair follicles and sweat of the cutaneous glands, occasionally with the angiomatous processes, but especially with the presence of many peculiar abnormal cells in the derma, which form a lesion known as the "congenital nevus".

A metaplasia of altered epithelial cells which are surrounded by the connective tissue of the derma, embraces a progressive transformation of prickle cells into clumps of pliable, ameboid cells without spines or fibrils. The epithelial origin and nature is confirmed by their clear, oval, vesicular nuclei, plus their diffuse contact with each other and neighboring epithelium, without intervention of any intercellular substance. While fibrous tissue is considered a product derived from pre-existing tissue of the derma, nevus cells are considered to be modified fibroblasts.

Certain cells are believed to undergo a gradual loss of fibrils. Pigmentation is known to be followed by depigmentation when the epithelial cells become isolated in the fibrous tissue because of their transformation into fusiform cells with fibrillar prolongations. Nerve fibrils have been found among groups of nevus cells, giving rise to the evidence that certain pigmented nevi and melanomas originate from the entire end apparatus of the cutaneous sensory nerves. Melanoma undoubtedly arises from the nevus cells, and histological evidence points toward the fact that nevus cells originate in the epidermis.

The relation of chromatophores to the nevomelanoma is not yet clear. Theoretical consideration favors the origin of all melanomas from the mesoblastic chromatophore, but the histology of human tumors favors the origin from the epithelial cells which have taken on a pigmentary function.

The established tumors exhibit either a carcinomatous or sarcomatous structure, or both. Again, the chromatophore is a mesoblastic cell which appears early in the formation of this germ layer; it displays many specific properties, some of which resemble those of the epithelium, so that the identification of this tumor with carcinoma or sarcoma seem undesirable. The term melanoma should be employed to emphasize the specific character of the tumor and its cells where they originated. The possible origin from epidermal cells may be indicated by the term "melanocarcinoma", and the sarcomatous character of other tumors indicated as "melanosarcoma".

Modes of origin.—Clinical characteristics as of Case II. The pigmented mole, or nevus, which is the source of a cutaneous melanoma, occurs chiefly on the face, neck and back, but may be found on any portion of the body. It may even appear on the sole of the foot, and on this and other exposed parts of the body, it is more subject to a malignant change.

The relation of a pigmented mole to the nerve trunks has occasionally been noted, as well as a unilateral or symmetrical distribution.* It appears as a minute pigmented spot (n. spilus), or as a soft, flat elevation which often grows to a warty excrescence (n. verrucosis), or a papillary tumor (n. papillaris). Many exhibit a growth of coarse hair, pointing to the implication of hair follicles (n. pilosus). Larger tumors may contain much loose connective tissue and fat tissue, suggesting a complex disturbance of the dermal structure (n. lipomatodes).

A remarkable wide extension over much of the body occurs in rare cases of the "bathing trunk type". The color varies from a light brown to a black, but not a few cases of pigment-free moles have also been described. The consistency is usually soft, in older fibrous lesions they are firm and the vascularity slight. Eventually they become hard and pedunculated (mulluscoid degeneration).

The clinical determinations of capillary nevi, port wine stains and lentigines (freckles) is usually obvious, but other pigmented tumors and processes in the skin may require microscopical study. Pigmented moles are sometimes associated with vascular nevi and with molluscum fibrosum. These lesions may be wholly distinct in the same region, or so intimately combined that they greatly complicate the question of their essential relations to one another.

Melanotic whitlow (Hutchinson) is a heavily

pigmented epithelioma which begins as a swelling of the lateral nail fold, finger or toe. The lesions soon ulcerate and involve the regional lymph nodes; the disease having all the essential features of a melanoma. It may originate in the flat, pigmented lesions, called lentigo, which may or may not show irritation or ulceration. In rare cases, no local point of origin of the disease can be demonstrated, clinically or at autopsy.

In the negro, melanotic tumors are rarely recorded, but because of the difficulty of diagnosis, it is probable that many are overlooked. In the lower animals, the moles and melanomas are relatively frequent. Their occurrence in white horses, was noted by Virchow as evidence of a constitutional dyscrasia.

Course.—The majority of pigment nevi display a long period of gradual growth, a phase of quiescence and a period of regression. It must be assumed that a congenital influence occurs within the structure of the derma in all cases, as some moles are visible at birth. Those which appear in early life, always show a progressive form of the growth. The growth limit is usually restricted to a small innocuous tumor, which tends to undergo fibrosis and atrophy. Occasionally they become hard, flat and circumscribed (fibromatous degeneration), and repeated trauma usually causes a limited overgrowth. A malignant change may take place in these conditions, usually following trauma or incomplete extirpation. Familiarity with these apparently insignificant lesions, constantly invites meddlesome interference by the patient, surgeon, dermatologist and others.

An enlargement or an intensification of the pigmentation of the lesion may be an early indication of a malignant change. At this time, a wide surgical extirpation may be of value. Without surgical removal of the growth, a rapid growth of the lesion and extension of the original involvement may occur. Certain situations remain localized for many years because of repeated excisions. In other instances, there immediately occurs or sometimes after a period of years, a widespread dissemination with an invasion of the regional nodes, or more often the blood stream will transport the metastasis. The skin is the chief site of the first metastatic tumors which may be very numerous. These tumor formations may be painless, firm, nodular or hemorrhagic formations which increase in size for a period, and then become circumscribed, fibrosed and even pedunculated. Such metastatic formations may appear in individual groups; then an involvement of the viscera, the lungs, kidneys, brain, bonemarrow, serous membranes and other structures may follow. Melanemia, melanuria and cachexia soon develop. The metastasized disease usually terminates after a three year period, but some conditions may go on for a ten year period, between the time of surgical removal of a primary tumor and the appearance of metastatic changes (Dobbertin). A melanoma of the liver has been reported by Fisher and Box, fourteen years after the removal of a primary intraocular tumor.

Melanemia is frequently an early complication, and may be severe and continuous with an involvement of the serous membranes, meninges and intima of the blood vessels. Melanuria occurs as the result of the excretion of pigment grains, or the passage of tumor cells through the glomeruli. In early cases, the urine may be dark brownish in color, as the result of dissolved melanogen; as metastasis is established, the urine may become black.

The acute conditions may not reveal metastatic changes in the skin, but with a pronounced melanemia, melanuria and cachexia, will prove fatal in a period of weeks.

Resume

1. Melanoma is a pathological tissue change which may embrace a wide variety of conditions, varying from a superficial blemish (innocent), as described in Case II, to an outright malignant process as revealed in Case I.

2. Interference, including surgical resection, is not advisable wherever possible.

3. Diagnosis should be confined to a history, inspection and indicated palpation. Biopsy for the most part is unnecessary and dangerous, therefore, contraindicated.

4. When surgical intervention is indicated as in Case I, a complete extirpation by means of wide resection should be performed (Cases I and II.).

5. While x ray therapy and radium are contraindicated as a form of therapy, a desired sclerosing effect was obtained over the surface area of the threatening, innaugural metastatic area in Case I.

Melanin, the pigment content of melanoma, is a product derived from the normal body economy. This is demonstrated by its chemical forebearers which contribute to the color of the eyes, skin and hair and simulate the cancer-producing cell, which is also an alteration of the normal cell in the body tissue, by manifesting a change in its intracellular potential.

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A NEW CONCEPT IN CARDIOLOGY*

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Heart diseases are on the increase. What is the cause of the growing number of heart fatalities? What can we do about the problem? The worst characteristic of heart disease is that it strikes without warning. It stalks its victim stealthily and relentlessly. Its approach is so concealed, that an apparently healthy individual is ignorant of the danger until the attack is made and he is fighting for his life; too often it is a losing battle.

This paper represents fourteen years of investigation concerning the initial causes of heart disease and the development of a method of controlling the menace. It is a report of the work of one, who among many others, is trying to reverse the frightening statistics.

In the United States and Argentina, heart disease leads all other maladies as a cause of death. In Mexico, Great Britain and other countries, it may not actually be Public Enemy No. 1, but its threat is growing. It is argued by some that the increase is only apparent due to the fact that we recognize the disease more readily than we used to. No doubt there is some basis for this opinion, but a cold appraisal of the figures from different countries, indicates that there is a dangerous, absolute increase in the incidence, and that the problem demands the mobilization of all medical brains throughout the world.

Cossio (1), reports that the Public Health Service of Argentina considers heart disease as one of the fundamental problems of public health. He says: "The official statistics of mortality show that heart disease is the chief cause of death . . . Among the thirteen million inhabitants of my country, there are approximately two percent with heart disease."

In the United States, heart disease is by far the principal cause of death. Steincrohn (2), asserts that at least four million persons are known sufferers from heart disease (about three percent of the population), and that there are still other millions who do not know that they are afflicted! According to Stieglitz (3), eight to ten percent of all American males under forty-five years of age have hypertension, with the figures rising to nearly forty percent for those men of sixty-five. The percentage is slightly less in women.

Classification of Heart Diseases

Since Vesalius challenged Galen's theories on the anatomy and the physiology of the heart, and Harvey made his immortal discovery, there has been painful but steady progress in the field of cardiology.

Today, after three centuries of work by an advancing army of investigators, heart diseases are classified; their predisposing, provoking and precipitating causes argued, and their therapeutic procedures definitely outlined. Classifications (2), are made according to the causes, anatomical diagnoses and physiological diagnoses. The causes include: arteriosclerosis, hypertension, anemia, bacterial infection, congenital maldevelopment, rheumatic fever, syphilis, thyroid disease and traumatic agents.

Marvin (4), states that ninety to ninety-five percent of all heart disease in the United States falls into four types—those cases resulting from rheumatic fever, syphilis, hypertension and arteriosclerosis. "With the single exception of syphilis", he says, "the causes are unknown." The most common form of cardiac insufficiency among adults, states Fishberg (5), is that which is due to hypertension and/or coronary arteriosclerosis.

Although the statement, "causes unknown", is repeated monotonously in our textbooks, an increasing number of investigators believe that infections, metabolic intoxications, psychotic turbulence, neurological factors and impairment of renal function are among the initial or provoking factors of heart disease. Modern therapy includes such measures as rest, diet, weight reduction, salt and caloric restriction, digitalis and other heart stimulants, mercurial diuretics, mechanical removal of infections, oxygen, phlebotomy, thyroidectomy, etc.

All this bespeaks much progress—but unfortunately, heart diseases are still on the increase!

The Heart and the Kidneys

Every practitioner encounters many patients with heart lesions which have developed from some unknown date. We know that a bacterial invasion, such as diphtheria very early in life, leaves the heart muscle weak or permanently enlarged (6), some observers are of the opinion that influenza, pneumonia and typhoid fever may also injure the heart muscle (5). We are familiar with such heart damage as a fatty degeneration, which begins insidiously and eventually changes the strong fibers of the heart muscle to flimsy, inelastic threads of fat.

This question of heart damage, both anatomical and functional, has been studied from many angles, and the means by which the tissues are invaded has caused endless speculation, but the student almost invariably comes up against that blank wall—"the cause is unknown". The findings presented here indicate the author's belief that a breach has been made in that wall and that the means of stopping at least some of the trouble on the other side has been found. This came about through an intensive study of the kidneys that was begun in medical school.

The investigations have covered fourteen years of actual laboratory and clinical work, during this time over 100,000 specimens of urine have been examin-

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ed, and more than 3,200 patients have received the treatment here outlined.

This study of the heart via the kidneys started because of a desire to correct most of the diseases of the genitourinary tract without the aid of cystoscopy. While the author was in medical school, a young woman suffering from pyelitis was examined; she obviously suffered great pain during the examination and for several days afterwards. This aroused the author's interest, since he had often, during his internship, observed similar results from the use of the cystoscope. It was evident from the symptoms present that the hard rubber catheter injured the mucous membrane, subjecting it to an inflammation that did not previously exist.

Before recording the steps that led to the author's observations in hypertension and other heart diseases, he wishes to review some of the fundamental facts about the kidneys as well as to cite the work of others.

Kidney-damaging Agents

"The most frequently injured structures", says Stieglitz (3), "are the heart and the kidneys." He states that: ". . . the heart and kidneys, like all other structures of the body, have a large functional reserve for meeting the demands of augmented labor under stress conditions. This reserve is gradually, almost imperceptibly depleted as we grow older, both through a normal process of senescence and through the innumerable insults of infections, intoxications and the like".

Infections.—Munger (7), believes that the colon bacilli family accounts for about fifty-five percent of urinary infections; among the cocal groups, about fifteen percent are staphylococcus. These "find their way to the kidney by way of the bloodstream, and here the diminutive end arteries arrest bacterial emboli". According to this same authority, infections in such remote areas as the tonsils, sinuses, gallbladder, teeth, prostate and cervix, contribute to accumulations within the kidneys. These normally lie dormant, awaiting a time when the body resistance is low. At such a moment of weakness, induced perhaps by a severe cold, overwork, or digestive disorders, the bacteria strike in force, and thereby produce one of the genitourinary infections.

Other Damaging Factors.—There are, however, other indirect causes of kidney damage. These can be explained by the general term, "the way we live". One cannot escape the conclusion that about ten times more work is thrown upon the kidneys than they were designed to perform. The dietary indiscretions and the sedentary habits of our civilized life; neglect of simple, natural functions; the tension under which we live—all these, add to the burdens of the hard-working kidneys.

Disease Processes Due to Kidney Failure

When the kidneys finally become damaged by enemies from without and trouble-makers from within, one of the acute genitourinary infections may attack; but still worse, the hostile process that results in hypertension and other heart diseases will thus probably be established.

Hypertension.—The rôle of the kidneys in the etiology of hypertension has been noted in many workers. In Schroeder and Steele's classification (6), hypertension is divided into four organic groups, the first of which is renal disease. The kidneys are responsible for one of the three types which are listed by Page (9). These organs, he says, are chiefly responsible for the hypertension occuring during glomerulonephritis or pyelonephritis. Mulholland (10), expressed the belief that hypertension is a symptom; that the underlying causes are almost invariably found in the kidneys, and that the clinician should call upon the urologist for help in controlling the hypertension.

In a review of the existing opinion, Dressler (11), says: "Renal causes of 'essential' hypertension, such as kidney infection, stones, and urinary obstruction are rather frequently discovered."

The Heart.—"It is justifiable to assume," says Stieglitz (3), "that in every instance of prolonged hypertensive disease, some degree of cardiac involvement occurs". The effects that kidney damage has upon the heart are manifest in two ways: First, the harm that comes to the heart directly, because of the increased pressure and secondly, a way that kidney damage injures the heart which is more indirect, and will be discussed later in the paper.

Preventing or Controlling the Results of Kidney Damage

The work of Goldblatt and associates (12), has been of more help to the author than that of any other research workers. In autopsies of hypertensive cases, Goldblatt noted extensive damage to minute arteries. He concluded that hypertension and kidney damage are inseparably linked, and the author has been able to confirm this finding repeatedly, both clinically and experimentally.

Goldblatt's work, of course, deals with an effect rather than a cause, even though it does trace causative factors to the kidneys, but it does not answer the question of the cause of kidney damage, impairment, or obstruction and how the first cause can be removed. However, other findings of Goldblatt's directed the author to a theory which may or may not be new. He produced hypertension in animals by blocking the blood supply to the kidneys. There was no significant rise of the systolic pressure, however, when large arteries in other parts of the body were constricted. The logical deduction, of course, is that any obstruction to the normal flow of blood through the kidneys will cause hypertension. This obstruction might be an arterial clamp, or it might be an accumulation of bacteria within the tubules which would have the effect of damming the stream. Such accumulations would naturally tend to strangle the minute arteries in the kidneys.

The effects of clogging the filter are twofold: First, there is the mechanical result that comes from closed passages; that is, throwing extra pressure on the arteries. The second and most important effect

is that caused by poisons pushed back into the circulation. They not only contribute to the hypertension, but actually injure the tissues, including the heart.

The work reported here has led to the conclusion that *in the majority of cases of heart disease, the kidneys are at fault.* The stress upon the kidneys is great, and when they are unable to perform their filtering function because of the accumulations of poisonous products, these are returned to the circulation. If the kidney impairment persists, the toxic products that remain in the circulation are then deposited in different parts of the body and set up focal points of irritation. If these toxic products are deposited in the joints, arthritis results; if they are deposited in the musculature of the heart, myocarditis develops. However, when the filtering efficiency of the kidneys can be restored, the fatal consequences of an already established heart condition can usually be postponed or the condition brought under control. Furthermore, if the kidneys can be kept functioning normally, heart ailments can actually be prevented. Now, the author will proceed to the proof of these statements.

A Bactericidal Agent

How can these accumulations in the kidneys be prevented and if not prevented, how can they be removed? The answer to these questions, the author believes, came through efforts to find a means of treating kidney infections, that would in most cases, make the use of the cystoscope unnecessary. The author began his experiments with various combinations of hydrochloric acid and methenamine, given intravenously. The purpose, of course, was to find a therapeutic, bactericidal agent with the least irritability to the genitourinary tract.

Methenamine, or urotropin, has long been used as a urinary antiseptic. Blanc (13), utilized it in certain types of kidney inflammation; von Takats (14), gave intravenous injections before every operation on the urinary tract; Batunin (15), made use of it in acute cystitis; Brunner (16), found it of value in the control of postoperative urinary retention and its sequelae and Bhattacharyya advocated its value in cases of influenza and nephritis.

Hydrochloric Acid.—The intravenous use of hydrochloric acid, as an agent for the control of white cells in the treatment of various infections, was first reported by Burr Ferguson (17), in 1928. His findings have been repeatedly confirmed by many workers. It is called "a great emergency therapeutic agent" by de Beszedits (18), for pneumonia, malaria, elephantiasis, leprosy, etc. Verdier (19), explains its action as follows: "Many drugs will stimulate the production of white cells, but only hydrochloric acid will reinforce the cell activity, for it has now been demonstrated that hydrochloric acid is a component part of the white cell and herein may lie the solution to our theories of immunity, for it can be conceived that a ready leukocyte response tells the difference between infection and the escape therefrom."

During the long experimental work with the therapeutic agent, many thousands of specimens of urine were studied. Being dissatisfied with the methods of urinalysis at our disposal, the author began experimenting with the centrifuge—a device that reveals many things about human excreta that we would not otherwise know. Since the urine is undoubtedly an index of body metabolism, and since the tissues are bathed with fluids that are finally eliminated through the urine, it seemed that we should be able to find something in the urine other than albumin, sugar and indican. The author feels that our knowledge of urine and urinalysis is very limited, and that too many specimens that might provide valuable clues are poured down the drain. Experiments with the centrifuge showed that the results were determined by the speed at which the machine was operated; new sedimentations were discovered that were not brought out by regular tests; these gave us hints as to what was happening in the body.

For a number of years, every specimen of urine was studied in the following manner: After a specimen was centrifuged and the liquid poured off, a blood pipet was filled with the urinary sedimentations and the casts were counted—hyalin, bacterial, granular, etc. Later however, when the therapeutic agent was perfected, it was unnecessary to count the urinary sedimentations in every case, because of the speed with which the agent stimulates the kidneys to eliminate its poisons.

The most satisfactory operating speed of the centrifuge was finally determined to be 2,500 revolutions a minute. A slower or a faster rate will not produce the desired results.

In testing the urine specimens of genitourinary tract infections by this method, it was found that in cystitis the microscopic field is filled with pus cells; in pyelitis the field shows pus, bacteria and debris with a mottled appearance; in pyelonephritis it shows hyalin, granular and bacterial casts. In those patients complaining of hypertension or other heart diseases, the microscopic field will vary according to the type of bacteria and toxins that predominate the system, but these usually do not appear until after the medication is administered.

Improving the Agent.—In improving the agent, various amounts and concentrations of methenamine were used in the cases of genitourinary tract disturbance. A strongly, alkaline solution of the pure drug caused sclerosis of the veins at the site of the injection, while in most cases, a neutral solution caused pyuria. Hydrochloric acid was combined with methenamine in diluted proportions, as this is the best agent to acidify methenamine.

After many years of trial and error, the solution was finally standardized. During this time an infinite number of concentrations and combinations of methenamine and hydrochloric acid were used.

Method of Standardization

The solution was standardized upon two classes of patients: those complaining of genitourinary in-

fections, and another group with hypertension. The following procedure was followed:

Genitourinary Infections.—Twenty men and twenty women who were near the normal weight of 60 kilograms, or 132 pounds, were chosen for the test. All had some type of genitourinary infection. Eight of the men had cystitis, four pyelitis and eight pyelonephritis. Ten of the women had cystitis, six pyelitis and four pyelonephritis.

The minimum amount of methenamine necessary to produce a bactericidal effect, with the least irritation to the genitourinary tract and with the maximum effect when combined with a relative proportion of dilute hydrochloric acid, was determined by this test. This dosage was found to be ½ gr. (0.03 gm.) of methenamine and 1/60 gr. (0.001 gm.) of hydrochloric acid U.S.P. per kilogram of body weight. The same dosage applies to individuals weighing over 60 kilograms. In fact, it was used on persons weighing from 85 to 240 pounds. When methenamine and hydrochloric acid are combined, in liquid form, in the amounts mentioned, they show a pH of 6.5 to 6.7 at the time of their mixture.

Three intravenous injections a week were administered to the patients who were selected for the test, and the treatment was continued for five weeks. (Incidentally, all the patients were working while taking the test. The solution consists of 5 cc. of methenamine (31 gr., or 2 gm.) combined with dilute hydrochloric acid (1/6 gr., or 0.0035 gm.) per 10 cc. Special process.*

The majority of the patients who underwent the test responded to fifteen injections. (This figure has been adopted as that which constitutes a course of treatment.) Specimens of urine were collected every week for five weeks to determine the influence of the medication on the kidneys.

Eighty-five percent of the patients who had cystitis, pyelitis, and pyelonephritis, and who were selected for the standardization test, responded to one course of treatment. Ten percent of those with pyelonephritis had to take more than one course; while the remainder, or 5 percent, were treated for a longer period of time.

Hypertensive Cases.—Early in the investigations the author became especially interested in the cases of hypertension, because he observed that the large majority of patients who had kidney involvement also carried an elevated blood pressure, and as the solution was administered to these persons, the blood pressure dropped. Therefore, a test was performed on those persons with hypertension who showed no kidney involvement.

This group consisted of ten men and ten women. All showed high blood pressure but the urine specimens did not show any kidney involvement. Injections were given three times a week and urine specimens were examined each week. After two weeks of treatment, or six injections, the urine specimens showed turbidity and sedimentations consisting of pus, Bacillus coli, casts, shreds, debris, etc. At the time the turbidity appeared, the blood pressure began to drop. After one course of injections, the urine became normal in color and the blood pressure was near the normal figure. A satisfactory response was shown in 392 cases.

*Renalgen.

Physiological Action of the Formula

A proper combination of methenamine and hydrochloric acid is nontoxic when administered intravenously, and its effect is four-fold: 1. It stimulates the kidneys to excrete the poisonous by-products which accumulate in the body and within the kidneys themselves. 2. It neutralizes out-of-the-way foci of infection and eliminates poisons through the kidneys. 3. It reinforces the white cells, thus assisting in combating the infection. 4. It influences the pH of the blood, tending to produce a balanced chemistry.

Case Reports

Over 3,200 patients received the treatment herein discussed. Their ages ranged from twelve to ninety. Of the total number, four hundred and twenty-seven were treated for hypertension alone; one hundred and fifty-two for heart disease exclusively, and the rest were cases of genitourinary infection, many of whom presented either hypertension or some heart complaint.

Essential Hypertension.—There were four hundred and twenty-seven patients in this group—three hundred and five men and one hundred and twenty-two women. Their pressures ranged from two hundred and eighty-four systolic to one hundred and sixty diastolic. In eighty percent of these patients, the pressure was normal at the end of one course of fifteen injections. The pressure was checked a week after discontinuance and was found to be normal; it was still normal at the end of the month when the patients were discharged.

Twelve percent of the patients with high diastolic pressure had to repeat the course before the pressure returned to normal; the remaining eight percent showed good improvement. Two of these, however, did not fully respond and were advised to drop the treatment.

Heart Ailments.—There were one hundred and fifty-two patients who received the treatment for heart ailments; one hundred and ten men and forty-two women. These individuals had been treated for various heart ailments such as chronic myocarditis, sinus arrhythmia, acute myocarditis, extra systole, auricular fibrillation, paroxysmal tachycardia, irritable heart, angina pectoris and in general, abnormalities of the heart and great vessels. In addition to what the patients received as specific treatments for the heart, Renalgen helped improve their condition in a manner that the drugs alone would not have been able to accomplish.

The following case reports are examples of the results of this therapy:

Case 1. (Office No. 2036). *Essential Hypertension with Arrhythmia.*—Mrs. W., a housewife, aged sixty-two, was first seen November 22, 1945. Before she came to the author for advice, she had been

confined to her home for nearly four years because of a heart ailment. In June 1940, she had a severe attack of headache, vomiting and vertigo. The diagnosis was a small cerebral hemorrhage and therefore rest in bed for several weeks was advised. Upon her recovery, a B.M.R. was taken, showing -17. Bed rest was again advised. After six months another physician was called in consultation and an electrocardiogram made; the tracing showed "myocardial weakness", and she was again advised to avoid all activities.

When her physician was called into military service she was brought to the author for examination. The patient collapsed in the author's office but was revived and the examination proceeded. Physically, she was well nourished and it appeared that the weakness was due to inactivity. Her chief complaints were extreme weakness, sick headaches and a fast heart. Her blood pressure was 200/106; the pulse 86, and the blood count practically normal. There was no anisocytosis and no poikilocytosis. Crenation was not observed. The Wassermann and Kline tests were negative.

The first urine specimen was clear and showed no sugar, albumin, casts or pus. After six injections of the medication, the urine was again analyzed; this time it was turbid. Upon microscopic examination, it showed pus, casts and bacteria in large numbers. At the end of the second week, the urine revealed an enormous amount of waste products; as these were eliminated, the patient showed a corresponding improvement.

The injections were given three times a week at the patient's home, where she suffered only occasional attacks of tachycardia. At the end of the course (15 injections), she became more active. The B.M.R. at this time showed -11; however, as there was still some bacteria in the urine, she was advised to take five more injections. After this, all the symptoms of hypertension disappeared and the urine became normal.

The author must state here that in this patient's case, he used Betasymplex*; this vitamin product was given to produce a tonic effect on the heart muscle.

At the end of the treatment, the patient gained strength, the heart action became normal and she began to do her own housework. At present, she is enjoying good health and is growing much stronger.

Case 11. (Office No. 640). *Hypertension with Arrhythmia and Palpitation.*—Mrs. A., a housewife, aged thirty-seven, the mother of two children, was first seen May 24, 1943. Her chief complaints were pain in the region of the heart, headache, arrhythmia and palpitation. The patient had had a hysterectomy and she was overweight. Her blood pressure was 210/106, and the pulse 76. Although she complained of pain near the heart, there were no signs of heart failure. The patient was taking digitalis upon the advice of her former physician. She said that her appetite was poor and that she ate merely to gain strength to work. When her health permitted, she worked in an office where her duties involved considerable walking which caused a swelling around her ankles. Most of the time, she was confined to her bed because of weakness and shortness of breath.

Blood tests showed no evidence of anemia; her blood count was normal and she was free from any bloodstream infection. The first urinalysis revealed some kidney involvement, indicating that the kidneys might be more at fault than the heart. She presented many symptoms of indigestion, yet she had been very careful of her diet. (Urinary absorption can give a patient many such symptoms.)

This patient's normal arterial pressure was restored before she had finished the course, and she became anxious to return to her work. When the author first saw her he asked her to discontinue the digitalis as he wanted to see what results could be obtained with the prescribed therapy; it was very successful. She started to show improvement after the second week of treatment. The injections were given twice a day for three days, and then three times a week.

Before the course was completed, she returned to work. After finishing the course, she came a week later for a check-up, then again a month later. At both times, the blood pressure remained normal and the heart pain, arrhythmia and palpitation had ceased.

Comments

These cases, which are typical of nearly six hundred cases of hypertension and other heart diseases, demonstrate the effectiveness of the therapeutic agent in stimulating the kidneys to eliminate its poisons; thereby benefiting, if not entirely removing, the symptoms of hypertension and heart disease.

The author has noticed that a large number of women who have had children, probably eighty-five percent, have some sort of kidney infection. This, the writer attributes to infections that occurred during delivery and also to unhygienic personal habits. Pain in the back, in the region of the kidneys, may be due to the pressure which results from a bacterial infiltration into the renal tubules, thus, plugging them to the extent that they produce pressure symptoms.

Thiamine Hydrochloride.—This discussion calls for a brief reference to the value of vitamin B_1 in those patients who are apparently, or presumably, suffering from deficiency. For such cases, the author combines 100 mg. of thiamine hydrochloride with the methenamine and hydrochloric acid.

Dressler (11), informs us that: "Severe deficiency of vitamin B_1 produces circulatory disorders affecting the heart and the peripheral circulation . . . The heart muscle, as well as the skeletal muscle, is the site of hydropic degeneration . . . The cardiovascular manifestations are not influenced by digitalis or diuretics, but the administration of vitamin B_1 has a prompt and spectacular effect."

*Winthrop Chemical Company.

Summary and Conclusions

For many years, medical educators have stressed the fact that the liver is the great detoxifying organ. This, of course, is largely true; but too little emphasis has been laid upon the fact that after the toxins are reduced so that they would have little or no effect upon the heart and system, the kidneys must filter them away. Otherwise, when absorbed into the circulation the toxins regain their virulence, and if allowed to remain in the system, eventually damage various structures—the heart muscle being the one that is most frequently attacked.

It has long been the author's contention that in many diseases the kidneys are at fault. Let these organs become overtaxed, and maladies of all sorts will invade the body from the interior. The laboratory and clinical observations reported here, have also led to the conclusion that in the majority of the cases of heart disease, the kidneys are at fault. The author therefore believes that this work shows that if the efficiency of the kidneys is properly restored, an already damaged heart can be shielded and the inevitable postponed; furthermore, most heart ailments can be averted in the early stages of their development.

The urine is an index of body function, and a proper urinalysis is our greatest aid in making a diagnosis. A modern centrifuge, operated at the most effective speeds, will give us vital clues to the disease processes.

The therapeutic agent discussed here is a simple, chemical compound consisting of methenamine and hydrochloric acid. It stimulates the kidneys to excrete poisons which have accumulated in these organs, and it acts as an eliminant of the poisonous products stored in the body itself. It is a powerful detoxicant; it does not injure the tissues and it can be administered to any and all individuals who suffer from toxic symptoms.

This agent is not a cure-all by any means, but it has earned a place in the therapeutics of those diseases which result from damaged kidneys, of which heart disease is of the most importance.

In the study of hypertension and other heart ailments, look to the kidneys. Keep the elimination healthy, and the body will be sound.

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OBESITY AND ITS MANAGEMENT

A Survey of 671 Patients

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Obesity is a symptom of a disturbed body-weight regulating mechanism. The causation is manifold, since the regulating mechanism is dependent on cortical and vegetative centers, the endocrine system, depot organs, the intermediary metabolism and on heredity (1). The old classification of endogenic and exogenic obesity is no longer acceptable, as inherent factors play their part in the disturbance of the aforesaid regulating mechanism.

A basic factor in the causation, perhaps the most important, is the disturbance of the appetite mechanism. Food intake in normal persons is regulated by the sense of hunger and of satiety, and corresponds to the energy output. In obese persons, the intake is independent of output, at least both in the dynamic state and in the developmental stage. When obesity is fully developed, the food intake is larger than in nonobese persons. It is adjusted to the caloric output, which is larger in the static stage in accordance with the increased surface area, and therefore there is an increased total resting heat production (1). The appetite mechanism may be disturbed in the neurogastric, in chemical, glandular or cortical parts. Strang, McClugage, and Heteny (9), for example, maintain that the feeling of satiety is delayed in obese persons. Lesses and Myerson (2) consider the regulating parts of the appetite mechanism disturbed in different physical states.

particularly with reference to the endocrine glands; for example, bulimia of hyperthyroidism and anorexia of Addison's disease. Social habits and psychological influences also play their part. "Obesity is often due to a defect in the mood which upsets the appetite regulating mechanism," wrote Lesses and Myerson. "In such cases increased eating, which does not represent true hunger, takes place in order to offset and compensate for the disturbed mood."

Caloric output, another part of the body-weight regulating mechanism, includes the caloric expenditure of resting metabolism, plus a caloric expenditure in consequence of muscular activity and specific dynamic food action.

The basal metabolic rate, as we know, is calculated on the basis of surface area, and it is sufficiently accurate for most obese persons. In general, it is difficult to obtain precise results, because of the short period of observation and absence of motion; absolutely unembarrassed breathing is necessary in the calculations. According to Rony (1), the calculated surface area may differ in persons with unusual distribution of fat depots—fat aprons, for instance.

Even if the basal metabolism rate is normal in obese people, the total resting metabolism is higher for them than for a normal person of the same age, sex and height, because of the increased body surface area (5). Muscular and nervous activity, which contribute to the total energy output, may be reduced in some obese people.

There are divergent views among nutritionists in regard to the specific dynamic effects of foodstuffs in obesity. Ganter, Strang and McClugage (1), found no significant difference in specific dynamic action in groups of obese, normal and lean people. Grafe (3), stated that a lowered, specific dynamic action of food can explain only a few examples of obesity.

It was long maintained that a disturbance of the endocrine gland function or functions was one of the most frequent causes of obesity. Attention was directed to the hypophysis, since prior to laboratory experiments many obese persons with genital underdevelopment were found to have hypophyseal tumors. It was discovered that obesity followed a removal of, or an injury to, the hypophysis. In certain varieties of obesity, such as the Fröehlich and the Cushing syndromes, pathological changes were often found in the pituitary or midbrain region. In the first variety tumors of the hypophysis, cysts, internal hydrocephalus and meningoencephalitic changes were found. Basophilic adenoma of the hypophysis occurred in the Cushing syndrome, but there were many examples of both varieties which revealed no pathological changes in the hypophyseal region. This does not invalidate the theory of functional influence on the gland, since the hypophysis affects most of the other glands by its hormones. On the other hand, basophilic hyperplasia or adenoma, was found in patients who did not exhibit clinical signs of Cushing's syndrome. There are some authorities, Kraus (6), for instance, who doubt the pathognomonic significance of pituitary basophilism.

It is common knowledge that the thyroid gland influences cellular oxidation. This gland maintains the general metabolic rate at a physiological level. Water metabolism, also, depends on the thyroid's regulating function. Hypothyroidism predisposes to obesity because of the lowered caloric output, but it is only when the caloric intake remains on a high level that hypothyroidism leads to obesity (1). The concensus among physicians is that obesity is rare in manifest thyroid deficiency. Obesity in true myxedema is rarely noted. It is usually a pseudo-obesity caused chiefly by water retention in the subcutaneous tissue and skin. The absence of obesity in severe hypothyroidism cases may be explained by direct and indirect depression of the anabolic and catabolic activities, thus preventing a positive energy balance.

The relationship between obesity and diabetes led von Noorden, and later Falta, to consider a diseased pancreas as the probable cause of obesity. The effect of chronic hyperinsulinism, according to Falta, promotes fat deposition (1). Chronic hyperinsulinism in man is sometimes seen in an adenoma or carcinoma of the pancreas, sometimes without demonstrable changes in the pancreas islets. It is characterized by hypoglycemic attacks (1), fasting hypoglycemia and a low, fat alimentary blood sugar curve. Apparently, no characteristic sugar tolerance curve is found in obese people. High glucose tolerance may sometimes lead to obesity, but obesity may develop in the presence of a normal or even low glucose tolerance (1). There is little proof today to support the theory that chronic hyperinsulinism is an important factor in the causation of obesity.

It is known that the sex glands influence body weight. Tandler (1), examined adult males who were castrated in childhood, and he noted two different categories. One showed generalized obesity with a predilection for the lower abdomen, hips, thighs and breasts; the other appeared tall and sometimes underweight but had fat deposits in the abdominal wall and thighs. In normal men, the testicles prevent the accumulation of fat in the regions where fat is ordinarily deposited, even in normal women. Some women who are castrated after puberty show obesity shortly after the operation. This suggests that when obesity develops, it is because of other factors than the mere loss of an ovary (7). We may assume that there are similar influences in the obesity of puberty, pregnancy and the menopause. The pregnancy cells in the anterior lobe of the pituitary and the excess amounts of gonadotropin in a high percentage of menopausal women, is suggestive of an association with the hypophysis. In secondary hypogonadism—for instance in adiposogenital dystrophia—the cause of obesity does not lie in the sex gland, nor does the

condition disappear, even if the sex glands develop after treatment with gonadotrophic hormones. However, obesity may not develop in secondary hypogonadism (Addison's disease, for example). The ovary influences water metabolism; the premenstrual gain in weight, sometimes up to four pounds, can only be explained by water retention (7).

Water retention in the tissues is notably increased in obesity. Von Grafe (3) pointed out that "fatty tissues absorb water like a sponge, without any circulatory disturbances and with no evidence of edema." It is known that a high caloric, high carbohydrate diet results in water retention, while a high protein content of the diet favors water elimination. Water retention and elimination are also controlled by the thyroid gland, the posterior pituitary, the hypothalamus and, as aforesaid, by the ovary.

Von Noorden suggested that the primary cause of obesity may be found in an intermediary metabolism which, according to Rony (1), in the majority of obese persons living on an unrestricted diet shows no characteristic deviation from the normal.

Heredity also appears to be another important factor in the development of obesity (4), (9).

Study of the causes of obesity shows that its development is due to many factors. Howard and Mills (10), concluded: "It would seem that, although the immediate exciting causes of obesity appear to be the ingestion of abnormal amounts of food, or alcohol, or deficient exercise, yet the underlying basis is probably an obscure endocrine dystrophy, which overthrows the weight regulating mechanism of the body by an imposed economy of metabolism, and consequently excessive storage of fat."

There is little proof that certain varieties of fat distribution correspond to a disturbance of specific glands of internal secretion. Men usually deposit more fat in the upper part of the body; women in the middle or lower part. Deviation from a distributory tendency apparently have their origin in deficiencies of the sex glands (1).

Laboratory and Clinical Study

Our appended data was derived from the records of six hundred and seventy-one carefully observed patients.

The majority found great pleasure in eating; many showed preferences for certain kinds of food, especially starchy foods, while others nibbled habitually between meals. Eating, for some weak-willed persons, is an escape mechanism comparable to an alcohol or drug addiction.

The basal metabolic rate of 592 obese patients was determined as follows: 78.5 percent (465), showed a BMR between plus and minus 15 percent, a result which most authorities consider normal; 3 percent (18), had a BMR below minus 15 percent without any signs of hypothyroidism; 18.5 percent (109), showed a BMR of more than plus 15 percent. The high BMR of 8 of the patients was explainable by the fact that they had taken thyroid medication for some time prior to the present treatment. One patient showed signs of myocardial damage, while three were very nervous. For the remainder, we found no explanation. In order to determine whether there was any difference between the BMR in the dynamic and in the static state of obesity, we compared the graphs of those persons whose obesity was of short duration and who therefore were apparently in the dynamic state. Four out of five patients who had gained 10-30 pounds (4-13.6 kg.) two to three months prior to our treatment showed a normal BMR; one who had gained 11 pounds (5 kg.), within one month had a BMR of plus 36 percent; one patient with a gain of 20 pounds (9 kg.), within the last seven months showed a plus 38 percent. Among twelve patients with a gain of from 12 to 80 pounds (5.4 to 36.3 kg.), within the last year, two showed a BMR over the normal; one was 100 percent overweight (BMR plus 30 percent). On the other hand, we were consulted by a fifty year old patient (overweight 35 percent), who had a weight standstill for two years prior to our treatment and a basal metabolic rate of plus 37 percent. Examination revealed no pathological changes in the cardiovascular system and no evidence of thyrotoxicosis.

Our results differ from Grafe's (3), and Rony's (1), inasmuch as the first found a deviation from the normal in only 8.6 percent and the latter, in 10 percent.

Examination of the fasting blood sugar in 181 of the patients gave normal results (Cecil's data (8), showed that it was within the range of 60 to 120 mg. percent) in 178 persons. Among the 671 patients, two showed symptoms of diabetes. The fasting blood sugar of one was 175 mg. percent and by dieting alone, it was reduced to 110 mg. percent. The other patient showed traces of sugar in the urine and a fasting blood sugar of 194 mg. percent; after a loss of almost forty pounds, the blood sugar was 89 mg. percent. In seventy-six of the patients, we tested the fasting blood cholesterol prior to the commencement of a reducing regime. In nineteen patients (25.4 percent), the fasting blood cholesterol was more than 250 mg. percent and in one, 333 mg. percent. In the latter case, the blood sugar was 111 mg. percent. (Her mother is a diabetic.) The BMR was normal in these patients and there were no signs of hypothyroidism.

The association of obesity with high blood pressure is relatively frequent. Among 645 persons, 549 (85.1 percent), showed a systolic pressure below 150 mm. Hg. and a diastolic pressure below 90 mm. In fifty-six persons (8.8 percent), the systolic and diastolic pressures were increased; in eighteen persons (2.7 percent), the systolic pressure alone was high. Hypertension was found to be less frequent in our series than in other reports.

Gager (1), discovered hypertension in 28.3 percent of his obese patients; Rony (1), in 19 percent and Terry (1) in 58 percent. Hypotension (a sys-

tolic pressure of below 100), was noted in twenty-two patients (3.4 percent). Rony (1), reported an incidence of 6 percent hypotension. The blood pressure was clearly reduced in thirty-three patients (58 percent), with an increased systolic and diastolic blood pressure, and in sixteen patients (about 88 percent), who showed only a systolic hypertension as soon as the body weight was decreased. The electrocardiographic examination revealed signs of myocardial damage in ten patients. Of these, eight showed a normal blood pressure; in one, the systolic and in the other, both the systolic and diastolic pressure was increased.

Treatment

It is manifest that many of the basic causes of obesity are still unknown. Treatment, solely on the basis of causation, is therefore seldom possible. The symptomatic treatment is dietary regulation, to reduce the caloric intake below the energy expenditure. This is axiomatic, since the deposited fat is usually readily available for energy production and is used as the chief energy source. Strict cooperation of the patient is necessary, and if he or she is not mentally prepared to diligently follow the physician's advice, the treatment cannot prove successful. In addition to a restriction of the diet, the water balance also has to be gauged.

According to Grafe (3), the number of calories in a submaintenance diet should be reduced as far below in requirement as the weight is in excess and figured on a percentage basis. He does not deem it advisable to go below 25 percent of the normal requirements. On the other hand, Evans and Strang (11), kept obese patients on a diet of 400 to 600 calories without demonstrable harm. Most clinicians suggest a diet equal to the resting heat production, minus 20-40 percent (1); that is, about 1000-1500 calories for average obese persons. Rony (1), recommends 600 to 1000 calories. Not only the quantity of calories must be kept in mind, but also the quality of the food. Foodstuffs which are deposited with little loss must be limited as much as possible. Almost all clinicians, therefore, recommend a diet high in proteins; at least 1 gram per kg. of the ideal weight—if not 2 grams. The specific dynamic action of protein increases the caloric output, and protein is further important because it promotes elimination of water. A high protein content in food permits the restriction of carbohydrates, because part of the protein in the body is changed to glucose and the danger of acidosis is thus avoided. The remainder of the calories should be supplied by carbohydrates from low percentage vegetables, fruits or fruit juices and salads. The carbohydrate minimum for overweight persons may be placed at 0.6 grams per kilogram (12). A low carbohydrate content of food does not impair the glucose tolerance in obese people.

During treatment, patients sometimes complain of listlessness, fatigue, emotional irritability and an irresistible craving for sweets. These symptoms are probably caused by hypoglycemia, and the taking of a small amount of sweets will give prompt relief.

The restriction of food intake, by a diet almost totally lacking in fat, may cause a vitamin deficiency; however, since fat is necessary for the absorption of vitamins A, D and E, these vitamins should be supplied. The requisite minerals must also be given.

The tendency of an obese body to retain water makes it necessary to restrict the patient's fluid intake; one quart of fluid a day is the amount permitted. The sodium chloride intake should be limited. The effect of diuretics is only transitory; they are not effective in draining off the retained water in obese persons.

Considerable willpower is required to adhere to a restricted, dietary regimen for many months. A drug to curb the sense of hunger, without harming the patient, was therefore considered highly desirable. Nathanson (13), confirming the research work of Prinzmetal and Bloomberg on the effect of benzedrine sulphate as a therapeutic agent in the treatment of narcolepsy, found that the drug, an ephedrine-like substance, decreased the appetite. The drug produces an exhilerating, euphoric effect. Lesses and Myerson (2), and many other investigators, were able to verify this effect. Benzedrine sulphate is a vasoconstrictor, which temporarily increases the blood pressure and relaxes the smooth muscle. It depresses gastric motility in the dog, and in human beings the gastric emptying is delayed and intestinal motility depressed (14, 15, 16). Kunstadter and Necheless (14), believe that the psychosomatic effect of the drug, plus the depression of gastric hunger motility and of hunger proper, explains the results in the treatment of obese children. On the other hand, Beyer and Meek (17), found that the final emptying effect on the stomach was not prolonged to a significant degree. Ulrich (16), did not observe any permanent increase of the BMR after the use of benzedrine, while Beyer (19), noted an average of 15.4 percent increase of the BMR within the first two and a half hours after the administration of 30 mg. of the drug; the BMR becomes normal within twenty-four hours. The maximum rise in blood pressure, which follows the administration of benzedrine sulphate occurs in one and a half hours.

Unpleasant reactions to benzedrine are dryness of the mouth, disturbed sleep and muscular pain. When the drug is combined with one of the barbiturates, this stimulating effect is neutralized. We are in accord with Myerson (20), who states that the use of benzedrine with atropin is contraindicated, because the action of the parasympathetic system is thereby blocked and it allows the sympathetic effect of benzedrine sulphate to become more firmly established.

In time, patients will develop a tolerance for the drug, the effect of which can be restored by increased dosage or complete withdrawal for a time. It is not toxic up to doses of 60-80 mg. during forty-eight hours (21).

Benzedrine sulphate does not directly cause a loss of weight; it curbs the sense of hunger and thus enables the patient to remain on a sub-maintenance diet.

Of the hormone preparations used in obesity, only thyroid is important; preparations of the hypophysis and gonadotropin are valueless in this respect. There is no unanimity regarding the use of thyroid gland preparations in overweight patients. Strang, McClugage and Evans, Short and Johnston (1), maintain that it is illogical to administer thyroid to an obese person with a normal BMR because the total resting heat production is 20-50 percent above the "ideal level". Short (22), uses thyroid extract as soon as the BMR drops to a lower level (after the utilization of a low caloric diet); while Combs, Reader and Carlin (1), absolutely decry the use of thyroid extract in obesity cases. They cite the danger of addiction, thyrotoxicosis and cardiac fibrillation. Grafe (3), combines dietetic treatment with the use of thyroid extract in large doses, on the basis that it stimulates general celluar metabolism, protein metabolism and conduces fluid economy. Nontoxic doses of thyroid extract, without any food restriction, are not followed by an appreciable loss of weight. Rony (1), and others, recommend thyroid extract as an adjunct to a sub-maintenance diet because, according to clinical observation, combined treatment gives better results than dietary restriction alone. The effect of nontoxic doses of thyroid extract on the BMR may become apparent after considerable weight has been lost on a sub-maintenance diet. Untoward effects such as headaches, pains in the muscles and bones, spasms in the lower leg, etc., are only noticeable, if at all, during the first few days. None of our patients showed any signs of addiction. One showed auricular fibrillation after prolonged use of a thyroid gland extract and another showed premature ventricular beats. After discontinuance of the drug, normal rhythm was restored in both patients within a few days. Patients with a low BMR often do not tolerate even small doses of a thyroid gland extract, while those with a normal BMR did not show any untoward effects. We do not prescribe thyroid extract in the presence of heart disease, in those patients with a high BMR or for irritable or emotionally unstable persons.

We do not recommend the increase of physical activity, such as regular exercises. The appetite is usually increased thereby, relatively more than the energy output itself.

Our program in the care of patients follows that used by Short (24). A thorough history of all the patients is obtained, particularly the facts concerning hereditary tendencies, habits, environmental influences, time of the onset of the obesity, diet taken, the nature of past treatment and previous endocrine studies. A complete physical examination is made, with special emphasis on fat deposits, distribution of hair and general bone structure. A record of the present weight and the ideal weight is made. The laboratory study includes a basal metabolism test, electrocardiagram, a differential blood count, urine analysis and blood determinations, if indicated. A conference with the patient follows, during which there is an exchange of views regarding obesity and an attempt is made to build up the patient's morale. Hazards of overweight are not overemphasized so as to frighten the patient, but he or she is convinced of the ease with which weight loss can be safely accomplished. The patient is kept hopeful and cheerful; the importance of calories is explained, as well as the futility of "cheating" in regard to the diet. Printed instructions are given to refresh the memory of the patient. The effect of the prescribed drugs and the physician's objectives are fully explained. Patients are informed regarding reactions, if any, and that a weight loss must follow if the instructions are adhered to. They have heard a great deal, and sometimes fear the use of benzedrine; a discussion of its therapeutic action is consequently essential. They are informed that it is not a drug to be taken carelessly, without the guidance of a physician, and that obesity is a disease which requires observation and treatment similar to other chronic diseases, if gratifying results are to be obtained.

In regard to dietary regimens, we stress the importance of the quality as well as the quantity of food. The caloric intake ranges from 600-1000 calories for active reduction, on a diet which contains 1-2 grams protein per kg. ideal weight. The remainder of the calories are derived from low percentage vegetables, fruit juices, salads and small amounts of fat.

From the beginning of treatment, benzedrine sulphate is prescribed in varied dosages, from 5-50 mg. a day with an average of 25 mg., depending on the reactions and results obtained. On rare occasions, we have administered the drug for eighteen months, because most patients discontinue treatment from time to time for some reason or other. The benzedrine sulphate is usually taken four times a day: on arising, before lunch, during the mid-afternoon and one hour pre-prandial. The dosage varies with the time of day when hunger is most acute. As a rule, 5 mg. are taken upon arising; 10 mg. for the second dose; 10 mg. for the third, and 5 mg. before dinner. Many patients ordinarily take only coffee and juice in the morning and do not require sustenance until lunchtime; they may skip the breakfast dosage. If a stronger dose is required before dinner, phenobarbital is added (one-half to one grain), with an average dose of one-half grain. No sleep disturbances nor other harmful effects have been noted from the use of the drug. There is no habit formation.

The administration of benzedrine is contraindicated in cardiovascular diseases; especially in hypertension associated with myocardial damage. In the absence of this damage, we begin with very small doses. Under careful observation, benzedrine sulphate did not show untoward effects in our patients suffering from hypertension. As previously

stressed, in more than 58 percent of the patients in this series, hypertension was strikingly reduced, concurrent with the weight reduction.

In general, benzedrine sulphate is effective in depressing the hunger-sense. Almost all of our patients confirmed this. Only few complained that the drug was ineffective in this regard. When placebos were utilized, many patients were quick to notice the substitution; however, it may be indicative of the value of benzedrine sulphate, that ninety-one patients (12 percent), as soon as they regained some weight or desired to reduce their weight further, asked for resumption of benzedrine as an adjunct to dietary restriction. The consensus among the patients was, that they could tolerate a submaintenance diet because the drug curbed their sense of hunger.

We routinely reduce the dose of benzedrine sulphate by about 10 mg. a day per month, finally prescribing only a 5 or 10 mg. dose. Thyroid extract is added (one-half to 4 grains) a day, only if indicated by the basal metabolic rate. A potent multiple vitamin preparation and minerals are added from the beginning of the treatment. Patients are warned not to consume more than one quart of fluid a day and to restrict their intake of salt. They are seen weekly or bi-weekly.

So far as the results of our treatment are concerned, the average weekly weight loss is 2.02 pounds per patient. It is ordinarily noted that the loss in the first week is much higher; from 6 to 7 pounds (2.7 to 3.1 kilograms). The loss may be even greater depending on the degree of overweight.

It is obvious that since obesity is the result of a disturbed body weight regulating mechanism, and since the treatment is purely symptomatic, a recurrent gain in weight is frequent.

The following table indicates the weight changes:

Years since treatment	*Weight unchanged*	*Part of weight regained*	*Weight completely regained*	*More than original weight*
1	13	15	1	3
2	6	7	1	4
3	9	5	0	1
4	1	0	0	3

Only patients who had learned to live on a restricted dietary routine over long periods of time maintained their weight. The others became the unrepentant victims of their appetite.

Two patients, who were about 10 percent overweight, did not lose weight. Two others reduced to a certain level, one from 193¼ to 148¾ pounds (87.8 to 67.6 kg.), and still another (30 percent overweight), from 231 to 202½ pounds (105 to 92 kg.); however we could not reach our objective. The patients did not lose weight during the following months, but perhaps they were less strict in their dietary observance or possibly they retained their excess tissue fluid. We thought it advisable to discontinue the treatment under these conditions and to begin again after a lapse of a few months.

Summary

Obesity is caused by a disturbance of the body weight regulating mechanism. Although the immediate factor apparently is overindulgence in eating and drinking, the true causation is still conjectural.

Diabetes mellitus and myocardial damage were rarely noted in our series of patients. In 8.8 percent, a systolic (over 150 mm. Hg.) and diastolic hypertension (over 90), was discovered; in 2.7 percent systolic hypertension alone was noted. With the decrease in body weight, there was a notable lowering of the blood pressure in 58 percent of the first group, and in 88 percent of the second.

Causal treatment of obesity is rarely possible. The symptomatic treatment is a dietary one. We place patients on a sub-maintenance diet of 600-1000 calories, with stress on the protein content of the food. Benzedrine sulphate is an important aid in easing the dietary regime for any long period of time. Thyroid extract yields the best results after the patients lose a part of their excess weight, and the total resting heat production is lowered. Small amounts of phenobarbital obviate untoward effects of both medications. The end weight loss in our series averaged 2.02 pounds (.09 kg.) a week.

Obesity is likely to recur unless the patient learns to regulate his food intake.

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Acute Maxillary Sinusitis

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Many statements or rules, pertaining to acute upper respiratory disease can be made, each with few exceptions. It also may be said that any acute bacterial rhinitis is essentially an acute ethmoiditis; treatment for which is not necessarily specific. It may be stated that acute sphenoidal and frontal sinusitis are almost as rare as, for instance, smallpox. Acute maxillary sinusitis, the author believes, is more frequent than is appreciated by many rhinologists and much more frequent than other practitioners realize.

A diagnosis of acute maxillary involvement is primarily based on the statement of the patient and secondarily on an intranasal inspection. The patient usually presents himself by phone or in person, giving an account somewhat as follows: "Doctor, I've had a cold for about a week, and during the last few days I arise from bed feeling very well, but when I get to work a severe pain develops on one side of my head. It is either above, in, or below my eye and even feels like a toothache at times. Every step aggravates the pain". A statement such as this is diagnostic of an acute maxillary sinusitis; frontal sinus involvement should not be suspected until the maxillary factor is eliminated. An inspection usually reveals a flow of yellowish, white pus from the respective middle nasal meatus. Transillumination or x ray will confirm the diagnosis, but are hardly indicated, except by persuasion of the patient and his family physician.

It is the opinion of the author that the treatment of choice is puncture and irrigation, every forty-eight to seventy-two hours, until a clear washing is obtained, regardless of the symptoms or lack of symptoms present. To substantiate this plan of therapy, results are herewith presented in five hundred and sixty-six consecutive cases, among the soldiers in army hospital clinics. Three hundred and ninety-two of the total were treated in the southwestern United States and one hundred and seventy-four in the United Kingdom; in each of these cases, pus was recovered at the first lavage. A total of 2,830 irrigations, or an average of five per patient, was recorded. For various reasons, it was impossible to follow to completion ninety-one of the cases; in the remaining four hundred and seventy-five cases, a complete cure was effected.

The anesthesia used, was ten percent cocaine hydrochloride in normal saline. It was applied to the nasoantral wall, lateral to the hanging portion of the inferior turbinate, with a small cotton applicator. The puncture was made with a standard, three inch, fifteen guage needle and the irrigating solution was warm, normal saline. The puncture was performed after a thorough nasal cleansing with capillary suction.

Maxillary sinus cases, in which the recovered lavage had a foul or grayish-green pus with the washing, are *not* included in the group in question. Such cases which failed to improve after eight to twelve lavages, were operated upon, by either antranasal sinusotomy, or the Caldwell-Luc operation, depending on the severity of the case, as well as other circumstances.

An accurate record of the number hospitalized is not available, but approximately ninety-five percent were treated as outpatients, and they lost no more duty time than that required for a visit to the clinic.

Prior to service in the armed forces, the author attempted a variation in the therapy of this condition, in both clinic and private practice. The conclusion was reached that the simple plan described is the most effective, although many patients object to the puncture. Irrigation through the natural ostium is equally effective, but only in cases where the ostium can be easily located and where it is larger in diameter than the canula used. It was found that the use of a retained antiseptic solution in the sinus after lavage, did not shorten the course of the disease. Sulfonamides, diathermy and x ray may combat the disease in a small percentage of cases, but it definitely cannot replace any method by which adequate drainage is obtained. One of the oldest principles of surgery calls for adequate liberation of pus, and this is followed in the puncture and lavage of the maxillary sinus.

Several reasons for failure in the procedure described, are as follows:

1. In patients with sharp facial features, it is conceivable that the needle may enter anterior to the maxilla and pass externally to the bone.

2. The point of the needle may be submucosal, either on the side of entry into the sinus, or all the way across in the mucosa of the far wall.

3. The point of the needle may be within a polyp.

4. A polyp, a clump of pus or folded mucosa, may block the ostium and act as a valve.

5. The middle turbinate may be wedged against the nasal side of the ostium.

6. The needle may carry a spicule of bone in its tip if not avoided or removed by a stylet.

Prognosis is not influenced by the quantity of pus found at any one lavage. The disease is present if pus in any amount is recovered, and it is cured only when a clear washing can be obtained.

Conclusions

1. Acute maxillary sinusitis is best treated by the evacuation of pus regularly and systematically.

2. The best method of accomplishing the above procedure is puncture and irrigation by way of the inferior nasal meatus.

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VITAMIN E IN HEART DISEASE

III

The Hypertensive Heart

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The authors have discussed elsewhere (1,2,3,4,5,) the value of vitamin E therapy in certain types of heart disease. In the present paper they describe their results in sixty-six consecutive, unselected cases of hypertensive heart disease. We might add that diastolic blood pressures were taken to the fifth phase.

It should be stressed again, that these patients were not selected in any way. Their progress might have been more favorable had we used larger doses of vitamin E or combined our therapy with such drugs as digitalis, at least in the early phase of treatment. Many of these patients are still showing steady improvement.

Case Histories

Case	Sex	Age	Major signs and symptoms	Duration	Initial tolerance	Previous Therapy	Present Therapy*	Results
1	M	68	B.P. 170/100. Dyspnea.	6 mos.	Unable to sing or conduct. Climbs one flight slowly.	Rest Nitrites	300 mgm.	Can sing but cannot conduct. Climbs stairs readily. No nitrites. B.P. 175/90.
2	M	60	B.P. 160/100. Angina. Dyspnea.	10 yrs.	Walks slowly. Pauses on stairs. Has to lie down after meals.	Rest Digitalis B-complex Nitrites	250 mgm. Digitalis	Climbs stairs. Works harder. Rest after meals unnecessary. B.P. 140/90.
3	M	69	B.P. 250/150. Insomnia. Ankle edema plus. Fatigues easily.	4 yrs.	Bee-keeper. Often idle.	Digitalis	200 mgm.	B.P. 210/100. No edema. Less fatigue. No insomnia.
4	F	77	B.P. 200/100. Auricular fibrillation. Dyspnea. Weakness.	6 mos.	"Cannot garden."	Digitalis	300 mgm. Digitalis	Stopped fibrillating. "Can garden; previously did not for thirteen years."
5	F	73	B.P. 190/100. Weakness.	8 yrs.	Housework difficult.	B-complex Phenobarbital	200 mgm.	B.P. 140/75. Housework easy. Fewer headaches.
6	F	62	B.P. 180/100. Dyspnea. Ankle edema plus. Pulmonary edema.	3 yrs.	Walks three blocks. Pauses on stairs.	Rest Digitalis	300 mgm.	B.P. 180/100. Can climb stairs and walk farther. No pulmonary edema. Leg edema reduced in six weeks.
7	M	70	B.P. 190/100. Dyspnea.	10 yrs.	Pain when climbing steep street. Five to six attacks per day.		200 mgm.	B.P. 160/90. Only one attack in a month, on the same routine.
8	M	67	B.P. 200/100. Dyspnea.	10 yrs.	Pain on excitement or half mile walks.		200 mgm.	B.P. 170/90. No dyspnea. No pain during farm work.
9	M	52	B.P. 170/90. Leg edema plus. Pulmonary edema. Dyspnea.	4 yrs.	Pain when excited. Slow on stairs. Lost job doing heavy work.		300 mgm.	No pain when excited. Generally improved. B.P. 160/90.
10	M	63	B.P. 200/105. Dyspnea. Weakness.	1½ yrs.	Excitement causes pain.		225 mgm.	B.P. 200/100. Slight improvement.
11	F	55	B.P. 160/90. Auricular fibrillation. Mitral and aortic stenosis. Enlarged liver. Ankle edema plus.		Sleeps with four to five pillows. Unable to walk two blocks. Many leg cramps.	Digitalis	300 mgm. Digitalis for fast pulse rate	B.P. 140/80. Can do housework. Less dyspnea. No leg cramps. Lips still cyanosed. Still fibrillating.
12	F	66	B.P. 150/100. Extrasystoles. Arthritis.	5 yrs.	Unable to climb grade. Occasional pain upon resting.	Rest	300 mgm.	B.P. 150/80. Less pain. Only a slight improvement.
13	M	52	B.P. 160/100.	4 yrs.	Walks one and one-half blocks. Can only climb one flight. Unable to speed his lathe.	Rest Nitrites	250 mgm. 100 mgm. phosphate injectable	B.P. 145/90. No improvement until hypos were begun. Can garden for the first time in four years. Walks farther and works his lathe faster.

Case	Sex	Age	Major signs and symptoms	Duration	Initial tolerance	Previous Therapy	Present Therapy*	Results
14	M	45	B.P. 140/100.	1 yr.	Cannot swim. Walks three blocks in thirty minutes.	Nitrites	300 mgm.	B.P. 120/80. Walks three blocks in eight minutes. Can swim fifty yards.
15	F	48	B.P. 250/140. Dyspnea. Cardiac enlargement. Pulmonary edema. Occasional ankle edema plus.	3 yrs.	Sleeps with four pillows. Can scarcely cross the street. Can only climb one flight.	Digitalis Phenobarbital	300 mgm. Digitalis	B.P. 210/120. No dyspnea. No pulmonary edema. Sleeps with two pillows. Ankle edema plus.
16	F	68	B.P. 225/100. Dyspnea. Ankle edema plus.	5 yrs.	Sleeps with two pillows. Walks slowly.	Phenobarbital	300 mgm. Phenobarbital	B.P. 210/100. Sleeps better. Less dyspnea.
17	M	74	B.P. 220/80. Dyspnea.	5 yrs.	Can only walk one block. Stops on stairs.	Rest Nitrites	200 mgm.	B.P. 140/70. Pain gone. Walks fifty percent farther.
18	M	62	B.P. 210/112. Auricular fibrillation. Nocturnal dyspnea. Enlarged heart. Dyspnea.	3 yrs.	Unable to walk.	Rest Digitalis	300 mgm.	Walked one and one-half miles on a hot day; still fibrillated. B.P. 130/80.
19	M	49	B.P. 140/100. Pulmonary edema. Enlarged liver. Ankle edema plus. Ascites. Severe dyspnea. Repeated failures.	3 yrs.	Bedridden.	Digitalis Salyrgan No salt 1000 calories	300 mgm. Digitalis NH_4Cl Occasional Salyrgan	No ascites. No leg edema. No pulmonary edema. Less dyspnea. No pain. Still in bed after four weeks of therapy. Increased output of urine on ephynal. B.P. 136/84.
20	M	74	B.P. 180/100. Dyspnea. Insomnia. Pulmonary edema. Enlarged liver. Ankle edema plus.	2 mos.	Idle.		300 mgm.	B.P. 180/80. Still has pulmonary edema. Can now walk one block, but unable to work. Pulse fell from 108 to 80.
21	M	49	B.P. 200/140. Dyspnea.	2 yrs.	Walks only one block.	Rest	300 mgm.	No effect.
							Hypo of 400 mgm. and 400 mgm. orally	Much improved. B.P. 190/130.
22	F	56	B.P. 170/140. Dyspnea.	5 yrs.	Can only do light housework, often forced to lie down.	Phenobarbital	250 mgm.	Can do all but heaviest housework; works all day. B.P. 160/90.
23	M	64	B.P. 200/100. Pulmonary edema. Ankle edema plus.	2½ yrs.	Tires easily. (farmwork).		300 mgm.	B.P. 160/100. More energy and works hard.
24	M	70	B.P. 200/120. Auricular fibrillation. Ankle edema plus.	9 yrs.	Can only walk one flight of stairs.	Digitalis	300 mgm. Digitalis	B.P. 170/90. Still fibrillating. Much less dyspnea.
25	F	61	B.P. 184/110. Dyspnea. Ascites. Ankle edema plus. Extrasystoles.	10 yrs.	Idle.	Estrogens	250 mgm.	B.P. 194/104. No extrasystoles. Can do light housework. No edema.
26	F	80	B.P. 190/90. Ankle edema plus. Auricular fibrillation. Marked cardiac enlargement.	10 yrs.	Idle.		300 mgm.	B.P. 210/120. Slight decrease in the ankle edema. Still fibrillating.
27	F	68	B.P. 162/70. Dyspnea. Ankle edema plus.	12 yrs.	Walks two blocks. Sleeps with two pillows.	Digitalis	300 mgm.	B.P. 140/70. Shops four blocks' distance. No ankle edema. Tends to four boarders.
28	F	42	B.P. 188/108. A-V block. Ankle edema plus.	10 yrs.	Idle.	Digitalis	600 mgm.	B.P. 160/120. No clinical improvement. Blood cholestrol fell from 383 mgm. percent to 225 mgm.
29	M	53	B.P. 185/108. Dyspnea. Palpitation. Ankle edema plus. Marked cardiac enlargement. Old coronary infarction.	1½ yrs.	Idle.	Digitalis NH_4Cl Mercurials	300 mgm.	B.P. 160/90.
							400 mgm.	No longer needs mercurials. No dyspnea. No palpitation.

Case	Sex	Age	Major signs and symptoms	Duration	Initial tolerance	Previous Therapy	Present Therapy*	Results
30	F	53	B.P. 200/110. Dyspnea. Varicose ulcers of both legs. Ankle edema two plus. Auricular fibrillation.	1 yr.	Idle.	Digitalis	300 mgm. 375 mgm. Digitalis	B.P. 155/115. Ankle edema almost disappeared. Chest clear. Still fibrillating. Two weeks later had hemiplegia and died in eight days.
31	F	75	B.P. 188/118. Ankle edema plus. Ascites.	3 wks.	Idle.	Digitalis	300 mgm.	B.P. 165/100. Light housework. No ankle edema. No ascites.
32	F	55	B.P. 250/120. Complete right hemiplegia, one and one-half years ago.	10 yrs.	Assisted about the house because of palsy — this produced pain.	Digitalis	300 mgm.	Can walk one and one-half blocks slowly, without pain. Can sew with right arm and talk clearly.
33	F	67	B.P. 300/130. Dyspnea.	1 yr.	Could not reach, lift, or walk one block.	Digitalis Phenobarbital	300 mgm.	B.P. 248/120. Does full housework. Walks three blocks.
34	M	65	B.P. 206/115. Dyspnea.	14 yrs.	Idle. Unable to walk; often in bed.		250 mgm.	B.P. 180/110. Is now working. Occasional mild pain.
35	M	62	B.P. 185/125. Enlarged heart. Enlarged liver. Ankle edema plus. Dyspnea.	10 yrs.	Idle. Unable to walk twenty feet.	Digitalis	250 mgm. Digitalis	Died in thirteen days.
36	M	62	B.P. 160/120. Dyspnea. Ankle edema two plus. Varicose ulcers of both legs. Pulmonary edema. Auricular fibrillation. Ascites.	1½ yrs.	In congestive failure in bed.	Digitalis	300 mgm.	B.P. 152/98. Able to sit in chair. No ankle edema. Varicose ulcers healed. Still fibrillating. No pulmonary edema.
37	M	69	B.P. 180/98. Pain only.	9 mos.	Unable to move.	Aminophylline Codeine	300 mgm. 325 mgm. 350 mgm.	No help. Slight help. Idle, in and out of the house. B.P. 165/100. No pain.
38	F	55	B.P. 200/100. Dyspnea. Arthritis. Slight enlargement of the heart. Nocturnal dyspnea.	1½ yrs.	Unable to walk even one block.	Digitalis	250 mgm.	B.P. 190/100. Can do housework and collect and milk two cows. Can walk over three blocks. No nocturnal dyspnea.
39	F	72	B.P. 290/110. Dyspnea. Ankle edema plus. Pulmonary edema. Ascites. Marked enlargement of the heart.	3 yrs.	Progressive congestive failure.	Nitrites Digitalis	400 mgm.	B.P. 200/120. No congestive failure. Able to cook meals.
40	F	60	B.P. 220/125. Dyspnea. Ankle edema two plus. Mild cardiac enlargement.	2 yrs.	Idle.		200 mgm.	No ankle edema. No dyspnea. Returning to job. (clothes pressing). B.P. 180/90.
41	F	56	B.P. 180/108. Dyspnea. Nocturnal dyspnea. Ankle edema plus. Liver enlargement. Marked cardiac enlargement. Auricular fibrillation.	15 mos.	In progressive failure in bed.	Digitalis	250 mgm.	Died three weeks after first seen. No response during the three weeks.
42	F	46	B.P. 215/150. Marked cardiac enlargement. Pleural effusion to the third right rib. Ascites. Maximum edema of the legs. Liver enlarged. Dyspnea.	1½ yrs.	In failure in bed.	Digitalis Mercurials NH_4Cl	1000 mgm. Digitalis Mercurials NH_4Cl	B.P. 165/115. No pleural effusion. Slight ascites only. Ankle edema three plus. No dyspnea. No orthopnea. Able to walk about the house.
43	M	54	B.P. 210/110. Dyspnea. Pain. Hemophysis. Slight cardiac enlargement.	3 yrs.	Walks less than one block.	Nitrites	250 mgm.	B.P. 174/98. No dyspnea. No pain. 6 mos. later.

Case	Sex	Age	Major signs and symptoms	Duration	Initial toleraunce	Previous Therapy	Present Therapy*	Results
44	F	67	B.P. 220/120. Dyspnea. Ankle edema plus.	2 mos.	In bed.		200 mgm.	B.P. 180/90. Occasional pain. No edema. No dyspnea. Can do light housework.
45	F	76	B.P. 172/90. Palpitation. Dyspnea. Ankle edema plus. Marked cardiac enlargement. Mitral regurgitation.	2 yrs.	Can do only light housework.		175 mgm.	B.P. 150/100. No dyspnea. No palpitation. No ankle edema.
46	F	67	B.P. 200/140. Dyspnea. Auricular fibrillation. Marked cardiac enlargement.	5 yrs.	Works with difficulty as a surveyor.	Digitalis	200 mgm.	B.P. 190/120. Minimal improvement in exercise tolerance.
47	M	75	B.P. 162/110. Ankle edema three plus. Pulmonary edema. Moderate cardiac enlargement. Dyspnea.	7 yrs.	Can walk only thirty feet.	Digitalis	300 mgm.	Transient improvement at first, but died after six weeks.
48	M	70	B.P. 170/90. Dyspnea.	4 yrs.	Can only walk one flight of stairs and one block.	Digitalis	200 mgm.	Died in seven weeks of a coronary attack.
49	M	74	B.P. 120/90. Dyspnea. Recent ankle edema plus.	6 mos.	In congestive failure in bed.	Digitalis	250 mgm.	B.P. 120/90. Idle about the apartment. No edema. No dyspnea.
50	F	69	B.P. 150/108. Pulmonary edema. Dyspnea.	5 yrs.	Unable to walk ten feet.	Phenobarbital	250 mgm.	After eight days there was complete relief of pain lasting for three days. Suddenly died one week later.
51	F	63	B.P. 280/155. Dyspnea. Extrasystoles. Moderate cardiac enlargement.	7 yrs.	Idle. Can hoe for only half an hour.	Phenobarbital	375 mgm.	Less dyspnea. Can now mow the lawn. Can hoe more than one hour. B.P. 260/140.
52	M	68	B.P. 180/70. Dyspnea. Auricular fibrillation. Slight cardiac enlargement. Mitral regurgitation.	8 yrs.	Idle.	Digitalis	300 mgm. Digitalis	B.P. 150/80. Less dyspnea. Still fibrillating.
53	M	77	B.P. 110/70. Dyspnea. Moderately enlarged heart. Osteoarthritis. Constant pain.	6 mos.	Idle. Must be helped from chair to chair. Unable to walk ten feet.		300 mgm.	B.P. 140/90. Can do some gardening. Less dyspnea. Occasional dull ache in the chest. Slight improvement of the arthritis.
54	M	55	B.P. 180/88. Slight dyspnea. Ankle edema plus. Nocturnal dyspnea.	2 mos.	Severe orthopnea. Needs three pillows. Can only walk thirty feet.		250 mgm.	No edema. No nocturnal dyspnea. Can walk more than block. "Sleeps all night for the first time in twenty years." T_3 became positive in four weeks. B.P. 170/100.
55	M	56	B.P. 220/135. Dyspnea. Ankle edema plus. Pulmonary edema. Marked cardiac enlargement. N.P.N. 126 mgm.	1 yr.	Can only do supervisory work.	Digitalis	300 mgm.	B.P. 200/120. N.P.N. down to 70. In seven days the failure cleared up; then renal failure began and uremic death occurred in one week, with N.P.N. readings of 200 and 220.
56	M	42	B.P. 250/160. Leg edema three plus. Dyspnea. Ascites. Marked cardiac enlargement. Pleural effusion. Bronchial asthma for twenty years.	1½ yrs.	Condition critical and in an oxygen tent. Doctors had warned the family of impending death.	Digitalis NH_4Cl Mercurials Aminophylline	400 mgm. Digitalis Mercurials	Left the hospital. Ambulatory in two and one-half weeks, with leg edema plus and no ascites nor pleural effusion. Seven days later, had another attack of bronchial asthma, followed by acute congestive failure. Lived fourteen weeks under treatment.
57	F	48	B.P. 210/100. Dyspnea. Ankle edema two plus. Moderate cardiac enlargement. Pulmonary edema.	1 yr.	Light housework.		250 mgm.	B.P. 195/100. Colloid goiter decreased in size. Can do full housework.

Case	Sex	Age	Major signs and symptoms	Duration	Initial tolerance	Previous Therapy	Present Therapy*	Results
58	F	71	B.P. 198/90. Pulmonary edema. Marked enlargement of the heart. Paroxysmal auricular fibrillation.	6 mos.	Light housework.	Digitalis Phenobarbital	200 mgm.	B.P. 190/92. Very rare fibrillation. Can garden vigorously. No edema. No E.K.G. improvement.
59	F	63	B.P. 220/110. Marked cardiac enlargement. Pulmonary edema.	3 mos.	Light housework.	Digitalis Phenobarbital Aminophylline	200 mgm.	B.P. 190/110. No edema. Can do full housework.
60	F	55	B.P. 260/165. Ankle edema plus. Nocturnal dyspnea.	2 yrs.	Nocturnal pain. Pain on climbing stairs. Unable to walk a half a block.	Aminophylline Phenobarbital	300 mgm.	B.P. 200/130. Walked six miles one month after discharge from the hospital.
61	F	52	B.P. 200/100. Marked dyspnea.	3 mos.	Light housework.	Aminophylline Phenobarbital Estrogens	200 mgm.	No pain doing full housework. No dyspnea. B.P. 162/90.
62	F	52	B.P. 165/110. Dyspnea. Nocturnal dyspnea.	1 yr.	Pain on doing light housework.	Aminophylline Phenobarbital B-complex	200 mgm.	B.P. 150/90. No pain on doing full housework.
63	F	62	B.P. 230/110. Palpitation. Pain. Nocturnal dyspnea.	13 yrs.	Can only walk a half a block. Only light housework.	Digitalis Aminophylline Phenobarbital	250 mgm.	B.P. 164/88. Can now do full housework. Rare pain. Began to paint the house but unable to complete the job.
64	F	42	B.P. 220/130. Dyspnea. Dizziness.	8 yrs.	Light housework.	Phenobarbital Nitrites Aminophylline	250 mgm.	B.P. 195/115. Can do full housework. "Feels better than in five years."
65	F	55	B.P. 230/95. Precordial pain.	2 yrs.	Housebound.	Aminophylline Phenobarbital	200 mgm.	B.P. 165/80. Can now shop. Left bundle branch block unchanged. No pain.
66	F	66	B.P. 180/90. Dyspnea.	6 yrs.	Walks only a quarter of a mile. Unable to hurry on stairs.	Rest	200 mgm.	Can walk one mile. B.P. 145/90.

LEGEND

F—Female
M—Male

*In this and in subsequent papers, an attempt has been made to express the dosage of vitamin E in terms of alpha-tocopherol. This is designed to facilitate clinical comparison between different preparations now on the market, since dosage is of fundamental importance in our treatment. Accordingly, any capsule containing "50 mgm. of natural mixed tocopherols" has been crudely equated to 25 mgm. of alpha-tocopherol. The only exception has been in the case of phytoferol, where the pharmaceutical house does this.

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They also wish to emphasize the role Mr. Floyd R. Skelton has played in these purpura—heart researches. It would be hard to exaggerate his contribution.

287 Queens Avenue.

Editorials

The Present Status of Streptomycin

According to the American Medical Association Council on Pharmacy and Chemistry, streptomycin "is a purified active principle produced by certain strains of Streptomyces griseus when they are grown on suitable mediums." It is prepared in a salt form, including the hydrochloride and sulfate salts. This antibiotic is unstable in solution and must therefore be kept in a refrigerator.

Certain gram-negative organisms are susceptible to this agent, and the fact indicates its use in Pasteurella tularensis, Escherchia coli, Hemophilus influenzae, Eberthalla typhosus, Brucella abortus, and perhaps, a few other such infections. A great deal of excitement was occasioned by the results of this drug against Bacillus tuberculosis in guinea pigs, but disappointment came when it was tried on humans.

One disadvantage of streptomycin is that it must be given in large doses to inhibit or kill the gram-negative organisms promptly; that is, from 2 to 4 gm. daily, in divided doses every three hours, because of the resistance of these parasites to any prolonged, weak dosage. Overdosage and susceptibility explain such untoward reactions as the rapid fall of the blood pressure, fainting, and the effects on both the vestibular and auditory branches of the eighth nerve, which result in vertigo and loss of hearing. The latter may disappear upon withdrawal of the drug, but dizziness, with a resultant inability to remain at work, may persist indefinitely.

In the light of these symptoms, the Presbyterian Hospital, New York, N. Y., sent a letter to its professional staff on December 23, 1946, stating that streptomycin may not be used in the wards without the permission of the attending physicians. In any case, caution is advised because of the severe toxic manifestations, the large dosage required to overcome resistant organisms, the relatively few indications for use and the cost of the drug.

In December, 1946, a pharmaceutical company distributed to physicians their memoranda, which described the field for streptomycin, viewed clinically.

A patient suffered a compound, comminuted, penetrating wound of the skull. For one year, various treatments which met with little success, were instituted to control the infection. These included surgery, repeated drainage, sulfadiazine and penicillin, exhibited parenterally and intrathecally. The organisms found were, Staphylococcus aureus, Pseudomonas and Bacillus subtilis. Eight months after the injury, a three-week course of streptomycin injected intramuscularly, was given in the hope of stopping the drainage, but to little purpose. Another culture was then taken, and it showed Staphylococcus aureus, Proteus vulgaris and diphtheroids, which did not yield to the daily instillations of penicillin. The management was then changed to daily irrigations with streptomycin, 60 mgs. in a concentration of 5 mgs. to 1 cc. of solution. This was followed by 30 mgs. of streptomycin, which was instilled and left in the wound intact. Three weeks later the drainage tract had completely closed and, therefore, irrigations were stopped. After five months, the cure seemed to be permanent.

Another patient suffered a compound fracture of the tibia, followed by an infection from Proteus vulgaris, Escherichia coli, Pseudomones aeruginosa, a penicillin-fast hemolytic Staphylococcus aureus and Clostridium sporogenes. A plan of management was set up whereby a débridement of the bone and necrotic tissue was performed, and streptomycin, 0.4 gram, was given intramuscularly every four hours, day and night for seven days. The injection was supplemented by the local application of streptomycin, 5 mg. per gm., triturated in Carbowax 1500 base daily for sixteen days. Result: all the germs, save Pseudomonas aeruginosa disappeared; this became "fast", but was finally eliminated by the thorough local use of acetic acid. Six months later, the patient was reported as doing well, with no discoverable recurrence as determined by clinical or x ray tests.

There is sufficient evidence to indicate that in streptomycin, we have a useful drug, but one which may play "tricks" on us, unless used with the greatest caution. The conclusion is that this new agent should be used only in lying-in conditions, so that we may give watchful care, supported by laboratory and all other available aids. Streptomycin is not something to carry in one's out-patient bag, to be dragged out for use *pro re na'ta.*

Diet

There are many fads in regard to diet, many of them handed down by tradition and superstition. On this question the *Lancet,* August 31, 1946, printed an article by Dr. John R. Forbes, medical registrar, Guy's Hospital, London. He believes that there are many myths involved in prescribing for a

patient a hard and fast dietetic regime, and questions whether we have any reason to think that diet is of any real importance in those diseases which are not associated with gastrointestinal dysfunction or with a definite upset of metabolism. He further argues, that the enforced disappearance, due to rationing and food shortages of finicky dietary regimes in the last few years, has led to no appreciable increase in death or disease. On the contrary, he is of the opinion, or suspects, that many patients are the better for it.

The writer quotes that there are certain diseases such as uremia, where roast beef if desired by the patient will do him no harm; or in a case of infective hepatitis, if the sufferer wishes for eggs and bacon, allow him to have them. The writer adversely criticizes, or perhaps rather suggests, that many of the current ideas among doctors as to the kind of food most suitable for various patients with complaints and diseases, are based on wrong premises. They require close scrutiny and revision, but he does agree that there are certain diseases and conditions when some foods must be withheld. It goes without saying, that the acute nephritic with severe oliguria will not respond well to a nitrogenous diet. Also too, the patient is unlikely to desire such a diet. Criticism is levelled against the unimaginative monotony of the diet frequently given in some British hospitals, often a greater obstacle to recovery than a diet supposedly correct. Furthermore, he adds that, "it is surely common sense that a patient who is eating the food he likes and enjoys, will be happier and will tend to recover more quickly than one who is condemned to a rigid, unvarying diet, a diet often based upon arm-chair theory, or on dubious feeding experiments with rats, or simply on superstition and bearing little or no relation to clinical reality". It is pointed out that several restrictions are unnecessary, including regulation of the use of tobacco and alcohol. As for the forced over-feeding of patients, which was practiced mostly on consumptives, the writer criticizes this custom severely; but it is wanning. He is also skeptical as to the therapeutic value of vitamins which are apt to be indiscriminately exhibited. According to his view, the mythical healing properties ascribed to vitamins, far exceed their very real value.

Of course, these expressions of opinion, while they contain the proverbial grain or grains of truth, are open to destructive criticism as the writer thereof is well aware, and were probably penned and published so as to ventilate the matter. There is no doubt but that there are many dietetic fads in and out of hospitals, perhaps some of which do no good and others more harm than good, but as said before, Dr. Forbes wrote in an intentionally exaggerated style in order to attract attention and provoke discussion on an important matter. It may be said that neither domestic cooking nor hospital cooking, is always of the kind to make the invalid's mouth water, and again the personal equation is important. "What is one man's meat is another man's poison", an axiom which applies to one in bad health, as well as to a normal person, that is, as a rule.

The entire article is most interesting, not to say stimulating. The nursing question is dealt with in an incisive manner and several of the old traditional ways of nursing are discussed. It is suggested that some of these ways might be abolished to the advantage of all concerned. Drug therapy is reviewed and attention is drawn to the fact that a few drugs have been proven beyond peradventure to be very valuable; some are useful, while their mode of action is partly understood, and on the other hand, many are worthless. In drug therapy, traditional custom, whose rationale is most dubious and whose practical value is negligible, intrudes and a list of such traditional customs and the disorders for the improvement of which they are given, is set down. Lastly, psychoneurosis is termed by the writer as a "modern myth", or rather this term is applied to the socalled "anxiety state" or "anxiety neurosis". The entire article causes one to ponder; as said before, it was written doubtless with that intention.

Prevention of Liver Damage from X Ray Therapy

Fatty necrosis of the liver, frequently resulting from deep x ray therapy, has been successfully prevented through the use of desoxycorticosterone acetate, Schering's Cortate, it was reported recently by Dr. Friedrich Ellinger of the Laboratory for Experimental Radiation Therapy of Long Island College of Medicine in Brooklyn, N. Y.

In *Science*, 104:502 (Nov. 29, 1946) Dr. Ellinger stated that Cortate protected against the development of liver necrosis in 83.5 percent of all irradiated mice treated. More than half of the control group of untreated mice developed liver damage. Further, the author stated "there was a slight decrease in the mortality rate produced by the various doses of x ray in favor of the desoxycorticosterone-treated group". Dr. Ellinger concluded that the clinical efficiency of radioactive substances in the treatment of leukemias and cancers may be improved due to the protective power of desoxycorticosterone against radiation effects in the liver.

VENEREAL DISEASE RATE REDUCTION

SOLOMON R. KAGAN, M.D.
Roxbury, Mass.

The leaders of public health have developed some measures for preventing the spread of venereal diseases among the population. The statistics of venereal diseases in the United States, however, show that an immense number are afflicted, proving that these accepted preventive rules are far from being satisfactory. While the fight against general infectious diseases is accomplished not only by general hygienic measures, but also by the use of effective specific serums and vaccines, the fight against venereal diseases lacks such potent weapons. The fact is that the campaign to fight venereal diseases is not conducted with enough vigor; for instance, no extensive attempts are made to freely circulate booklets on venereal diseases that would popularize their nature, outlook and modes of prevention.

The American press has repeatedly emphasized the menace presented by the German girls and women to our army in the American occupied zone of Germany. Being very much interested in the welfare of our army, the author submitted a memorandum to the headquarters of the United States Forces in Europe, which concerned the incidence of venereal diseases in these forces, and suggested a number of radical measures for reducing the rate of this disease. He was happy to receive an official reply, from which he learned that the army leadership there has already introduced many practical regulations in this respect and which, for the most part, are identical with the suggestions in the memorandum.

The following letter is from the headquarters of the U. S. Forces in Europe, addressed to the author, dated May 21, 1946.

"Dear Sir;

Reference is made to your letter of 4 May 1946, concerning the incidence of venereal disease among American soldiers in this theater, to which the Theater Commander has requested me to reply.

The problems resulting from the occurrence of venereal disease in the European Theater are constantly under study at this headquarters. Every effort is being made to reduce the venereal disease rate, some of the measures employed being closely related to the ones which you suggest. For example,

Education: Every soldier receives at periodic intervals, ranging from weekly to every six months depending on need, sex morality lectures given by his commanding officer, medical officer and chaplain. Supplementing these, informational material emphasizing the dangers of the venereal disease is being disseminated by radio programs and spot announcements, posters, pamphlets, and newspaper articles and editorials. Occupational orientation lectures are mandatory, and Information and Education Service gives wide distribution to their publications on occupational responsibilities.

Recreation: Athletics, games, hobbies, schools, movies, and libraries are available in adequate quantities to provide occupation of the free time of all men who desire to avail themselves of these privileges.

Control of contacts: Identifying information is obtained concerning each infected soldier's contact. On the basis of this information the girl is isolated in a German civilian hospital, examined, and treated until non-infectious. This system also operates in reverse, the infected girl naming her soldier contacts.

Vice raids: To curtail the activities of infected women before they have contact with soldiers, the military police apprehend all vagrant women in the vicinity of army installations for the purpose of placing them in an isolation hospital for examination and treatment if necessary.

All American military personnel in this theater are permitted to bring their families overseas to join them; however, relatively few have taken advantage of this offer. Further, although American girls have been and are being recruited to fill civilian jobs, the number of applicants has been small.

The contents of your memorandum have received careful attention at this headquarters. At this time, it appears that the action being taken is having a positive effect, inasmuch as the incidence of venereal disease is now on the decline. Your interest in this matter is greatly appreciated, inasmuch as it concerns a problem of importance to every American, both soldier and civilian.

Sincerely yours,
ROBERT P. SHEARER,
Major, AGD
Assistant Adjutant General"

In order to have an idea of the venereal disease rate of our army in Europe, the author applied to the Surgeon General in Washington, D. C., for statistical data. The following is the reply received dated November 22, 1946:

"Dear Doctor Kagan:

In response to your request of November 16, we are giving the following statistics on venereal disease among army troops in Europe:

Percent of Command Admitted to Treatment During the Average Week in Specified Periods and Areas for Previously Unreported Cases of Venereal Disease Acquired After Entry into the Service

Period—1946	Army Troops in: European Theater of Operations
4 Weeks Ended 25 Jan.	.4 equals 1 out of 250
4 " " 22 Feb.	.4 equals 1 out of 250
5 " " 29 Mar.	.4 equals 1 out of 250
4 " " 26 Apr.	.4 equals 1 out of 250
5 " " 31 May	.5 equals 1 out of 200
4 " " 28 June	.5 equals 1 out of 200
4 " " 26 July	.5 equals 1 out of 200
5 " " 30 Aug.	.5 equals 1 out of 200
4 " " 27 Sept.	.5 equals 1 out of 200

Very truly yours,
FRANK A. CANNON
Chief
Technical Information Division"

The established rules of the army authorities in the European Theatre pertaining to venereal diseases, undoubtedly reduced the rate of the disease considerably. They were introduced in accordance with local conditions and have only a temporary character; however, some of these regulations may be adopted in our country with great benefit. The above mentioned regulations in general, deserve the attention of our Departments of Public Health, who may accept some of them in full or with modifications for application in our country in peacetime. The achievements of military medicine, as it is known, greatly advanced certain phases of surgery. In the same manner, preventive medicine and hygiene may also benefit a great deal from military regulations in the field of venereal diseases.

176 Seaver Street.

MEDICAL ESSAY

Minds and Movies

B. LIBER
New York, N.Y.

As you know, the original meaning of the word "doctor" is teacher. The complete physician who understands his rôle and takes it seriously is not satisfied with giving orders without explanations. Intelligent patients never like the type of healer who simply says "take this three times a day". They need him as one needs a plumber or an electrician, but they feel superior to him. What they really want, in addition, is a teacher and adviser.

One of the questions the physician is often asked by his patients is what books are best to read—perhaps one might call this, "bibliotherapy"—what shows and movies—"theatrotherapy"—are best to see by themselves or by their children. They have in mind, of course, what of the intellectual nourishment is wholesome and what is harmful. This knowledge is important not only to abnormal individuals, but to normal persons who happen to be sensitive and impressionable as well. The doctor, therefore, should not be aloof or indifferent in such matters, he should be more or less informed, both for his own sake as the cultured man he is expected to be, and also for the benefit of his patients.

Some of the amusements which are served to the public are actually poisonous, and not merely by their lack of decency; however, this is another subject. A physician is not a moralist, a policeman, a judge or a better-than-thou citizen. He is a student, made of the same clay as others, who tries to be helpful. A teacher is not a preacher; for him, whatever can prevent diseases—physical and mental—is moral. He believes in the ethics of health.

A good many mental and near-mental patients are naturally attracted to reading material, theatrical plays and movies which are concerned with abnormalities or diseases of the mind. Unless these works or performances are carefully edited with an eye to their possible educational and salutary effect, they are so sensational that they injure more than they help; especially the neurotics, the mentally ill or those who are on the brink of a mental illness, and who are mostly unable to read or see anything in a detached way. These mentally ill people are rather inclined to attach any story to themselves; this may aggravate an existing condition or awake forgotten or dormant symptoms. In this respect the movies are the most guilty.

Sometimes both the subject and its presentation are so shaped as to purposely provoke fear and disturb the equilibrium of any imperfectly adjusted individual. There have been and there are movies which, based on spectacular, untrue analyses or on hypnosis, deceive those people who expect to be cured. One of the most obnoxious was, until recently, alas, extremely successful; the title, which held its spectators spellbound, enticed its poor victims. The aim of this lurid and impossible tale was evidently to bolster the box-office receipts; it certainly was not concerned with the welfare of those who flocked to see it. It contained some cleverly written and, for the layman, irresistible, half-truths and socalled "scientific" situations which can fool any patron who knows only a little about psychiatry. In reality, however, it was a caricature and distortion of the truth; its characters have never existed in life, in the forms in which they were portrayed in the picture, and there have never been such doctors or patients as those described on the screen. The much abused and convenient "amnesia", in its most extreme form, was the chief romantic hub and it was played upon for all it was worth. It also contained a love affair with which there would be no quarrel, if it were uncomplicated.

Nor would the author be interested in such a film if it were not extremely harmful; however, he knows of several mental patients who, after a fairly good improvement, became as a result of seeing this film, as restless and unadjusted as they had been before; they lost their self-trust which had been regained with great difficulty; in fact, some were now so disturbed as to once more necessitate their commitment to an asylum. Anyone who is not sure of himself should avoid such films, or books.

It is well known to the psychiatrist that the influence of books and films of this sort on the life of a somewhat distorted mind, which is for all intents and purposes normal, is very important. In fact, socially speaking, some of these people are regular barometers of what happens both in their immediate environment or at a great distance from them. Let an acquaintance or relative suffer from anemia, heart disease or cancer and they invade the doctors' offices with perplexing interrogations and ready-made diagnoses. For several weeks and months after the death of an outstanding statesman from a cerebral hemorrhage, badly scared individuals of this sort come to us, convinced that they too were doomed and implored us to avert the catastrophe.

We have rules and regulations regarding contagious and communicable diseases, but none for the purpose of avoiding the spread of mental disorders through the medium of the screen. There is a censorship dealing with the propriety and uprightness of such performances—in certain respects it goes too far, in others not far enough; none, however, exists for the purpose of safeguarding mental health.

There is another phase of this problem; such cinematic exaggerations and horrors can also be obnoxious or misleading in another way. They are often responsible for the magnified fear that families have of their own mental patients. On the one hand, modern psychiatry is trying to teach the public that a good many psychotics are curable or improvable; that kindness will go far toward that goal; that antagonism can only make matters worse; that the old belief "once insane, always insane" is untrue and that many elusive, incipient or transition cases are sufficiently adjusted to life and even work; while on the other hand, these harmful pictures tend to counteract the ideas which we aim to inculcate into

the people. Sometimes the results are incalculably injurious.

There are patients who could easily become adapted to live in freedom and to assume duties, if it were not for the insistence of their frightened kin who keep them interned. This seems incredible, since the majority of families have the tendency to prefer that their mentally ill remain at home; nevertheless the reverse is also true. The result is that while we constantly complain about the overcrowded conditions of the public mental institutions, they contain patients who should not be there.

Situations of this kind naturally open the way to all sorts of abuses—human beings with their petty interests, passions and hatreds being what they are.

For example, several years ago the author knew of a case which more resembled some medieval story than a truthful one taken from the palpitating life of our times. A rich woman—wealth may sometimes be more dangerous than poverty—was held in an over-populated state institution that had all the characteristic defects of such places. She was there through the persistence of one of her own close relations who had been inspired by one of the movies being shown at that time. True, there were unusual circumstances in this case, because ordinarily, patients of that social class are sent to private sanitaria; the real motive was of a financial nature and the sums involved were considerable.

The means were perfectly legal: a declaration of incompetency, court orders, a guardianship committee appointed by the court and under the leadership of an attorney, and above all, the consent of some psychiatrists. At a given moment, the patient, being well enough to be paroled by the hospital, fell into the hands of a physician under whose care she improved, and she became a well adjusted personality for over a year. This situation was beset with "danger" for the other party; there was the possibility that the patient might really be cured and that she might be considered juridically competent again! Behind all this, was the shadow of the theoretical, but absolutely groundless, fear—or was it an excuse?—that the patient might do some harm—a fear gathered from the socalled "facts" learned in still another toxic, pseudo-scientific, excitable movie; so, with the aid of the powerful authority of the law, the patient was re-interned. You may ask, how is such a crime possible? It was possible, because the one doctor who opposed hospitalization was overruled. The others, on whose opinions the internment was based, judged by the past symptoms only. A vicious circle developed; they dared not take the responsibility of returning to society a person with an unpleasant past history. Besides, do we not know that whenever experts testify, their opinions rarely agree? Therefore, just as the freed lawbreaker is often not allowed to "make good", such patients as these are condemned to remain patients. Their lives may not be unlike those of the unfortunate heroes of some ancient Greek tragedy, who are pursued by an inexorable fate which in the end destroys them.

65 West 95th Street.

News Items

Institute on Medical Education.—In connection with the N. Y. Academy of Medicine's centennial celebration, the Institute on Medical Education will hold the following meetings at the Academy, 2 East 103rd Street, New York, N. Y.: April 16—morning session, an address of welcome by George Baehr, president of the academy. The subject for discussion will be Premedical education and the selection of medical students. Afternoon session, Undergraduate medical education; April 17—morning session, Medical education of interns and residents. Afternoon session, Graduate and postgraduate training for specialization; April 18—Responsibility of the medical schools and hospitals in the training and continued medical education of the general practitioner. Afternoon session, Relation of group practice and community medical services to medical education.

New York Roentgen Society.—The New York Roentgen Society in affiliation with The New York Academy of Medicine will hold the following meeting on April 21, 1947, at the Academy, 2 East 103rd Street, New York, N.Y.: Venous Catheterization of the Heart by C. Sydney Burwell, research professor of clinical medicine, dean of the faculty of medicine, Harvard University Medical School; Lewis Dexter, associate in medicine, Harvard University Medical School, and Merrill C. Sosman, clinical professor of radiology, Harvard University Medical School. The discussion will be held by Andre Cournand, associate professor of medicine, College of Physicians and Surgeons, Columbia University.

Institute on Hospitals.—The Institute on Hospitals will hold the following meetings at the N. Y. Academy of Medicine: April 21st, morning session, Future of hospitals; afternoon session, Responsibility of the hospital to the general practitioner; April 22nd, morning session, Responsibility of the hospital in the rehabilitation of patients; afternoon session, Hospital and home care of patients with long-term illness; April 23rd, morning session, Psychiatry in the general hospital; afternoon session, Responsibility of the trustee to the hospital and the community.

Radio Health Programs.—New York University College of Medicine, in cooperation with WNBC, New York has inaugurated a series of weekly programs entitled "How's Your Health?", featuring members of the faculty as guest speakers and Dean Currier McEwen as "medical moderator." The program, to be heard every Saturday afternoon from 2 to 2:15, will originate from Dean McEwen's office at the College of Medicine and will run thirteen weeks.

Norton Medical Award.—The $3,500 Norton Medical Award for 1947 has been made to Dr. Bertram M. Bernheim, Baltimore, Md., for his book *A Surgeon's Domain.* The award is made annually for the best book written by a professional man, for the layman. Previous winners of the award have been *The Doctors Job* by Dr. Carl Binger, and *Doctors East, Doctors West* by Dr. Edward H. Hume.

Exhibition of Doctors of Old New York.—In commemoration of the centennial of the New York Academy of Medicine, a special exhibition of "Doctors of Old New York" was recently opened at The New-York Historical Society, Central Park West at 77th Street. Covering the period of the last 150 years, the exhibit is composed of portraits and engravings of prominent medical men, doctoral theses and medical tracts, illustrations of early hospital buildings, and some items of medical equipment, such as leg splints used in the Revolutionary War, a crude tooth extractor, a medicine chest complete with medicines of the 1840's, medicine scales and mortars and pestles, used by doctors in mixing prescriptions.

The exhibition, open free to the public will remain on view through April 30 during museum hours, which are: 1-5 daily and Sundays, 10-5 Saturdays, closed on Mondays.

The Franklin Medal.—The 1947 Franklin Medal, highest honor of The Franklin Institute, will be awarded to Dr. Enrico Fermi and Sir Robert Robinson, according to an announcement by Dr. Henry B. Allen, executive vice-president and secretary.

Dr. Fermi, physicist at the Nuclear Research Institute in Chicago, will receive the medal for outstanding work in the field of atomic energy. His immediate recognition in 1932 of the neutron as an atomic projectile has resulted in much of what science knows today of this important development.

Sir Robert Robinson, professor of chemistry at Oxford University, England, is generally regarded as one of the world's leaders in organic chemistry. He will be honored for his invaluable contributions to the present knowledge of natural substances, such as plants and other living things. His recent investigations of pyrimidine analogues, and their relation to vitamin-B, has greatly benefited mankind.

The Franklin Institute's Committee on Science and the Arts, established in 1834, which selects all medalists, has awarded the medal in previous years to Thomas A. Edison, Guglielmo Marconi, Neils Bohr, Orville Wright, Albert Einstein and Harlow Shapley. The gold medal, which carries a medallion of Benjamin Franklin, is awarded annually to workers, regardless of their country or creed, who have done most to advance a knowledge of physical science and its applications.

U. S. Vitamin Corporation.—H. Boris Burns has been reelected president of the U. S. Vitamin Corporation, New York, N. Y., occupying this position for the eighth year. In his acceptance speech Mr. Burns voiced confidence in the continued growth of the company. He believes that 1947 will be a banner year for the firm's vitamin, mineral, amino acid, and pharmaceutical preparations. Dr. Louis Freedman, director of the laboratories of U. S. Vitamin Corporation for many years, has been elected vice-president in charge of research. Dr. Casimir Funk, who first isolated and named the "vitamine" in 1912, has been associated with U. S. Vitamin Corporation since its inception, and will continue his work in the company's research program.

Amfre Drug Company to Expand List of Ampul Specialties.—The Amfre Drug Company, Inc., New York, N.Y., makers of pharmaceutical preparations for over twenty years, has purchased the business good-will and rights to manufacture and distribute the products of E. Tosse & Co., Inc., producers of bismogenol, nitroscleran, ekzebrol and other established ampul specialties. Tosse products will be sold through a special division of Amfre Drug Company, which will acquire all the Tosse patent rights and trade marks. Plans are being drawn up to expand the line of Tosse ampul specialties for a broader service to physicians, surgeons, hospitals and industrial medical departments. Headquarters for E. Tosse & Co. will be the same as Amfre, 95 Madison Avenue, New York 16, N.Y., to which all inquiries should be addressed.

Third National Conference on Health in Colleges.—The Third National Conference on Health in Colleges to be held in New York City, May 7 to 10, 1947, will be sponsored by thirty-five leading organizations in health and education. The national sponsoring organizations include the Association of American Colleges, the American Association of Teachers Colleges, the American Student Health Association, the American Association for Health, Physical Education and Recreation, and the National Health Council. Alexander J. Ruthven will be conference president.

Nineteen working committees for the conference have been appointed to investigate and make recommendations in six general areas of college health practices. Special problems of prime importance to young adults in colleges, which will be studied by committees, include: health of veterans, mental health, tuberculosis, dental health and social hygiene. In order that information on best practices in college health may be generally available to college administrators and health workers, the proceedings of the Third National Conference on Health in Colleges will be published in book form.

Further information may be obtained from the secretary, 1790 Broadway, New York 19, N.Y.

LETTER FROM BRITAIN

(From Our Own Correspondent)

General Board of Control for Scotland

Dr. H. B. Craigie has been appointed the medical commissioner for Scotland. Dr. Craigie is now the deputy superintendent of Whittingham Mental Hospital, Preston.

Silicosis, Tuberculosis and Occupational Dermatitis

Silicosis, tuberculosis and dermatitis may exist in the same person at the same time. O. Auerbach and M. G. Slemmerban, in the *American Review of Tuberculosis,* February 19, 1944, found that although silicosis and tuberculosis may exist together in the same lung, each conserve its individual integrity. Cases of occupational dermatitis are becoming more common, and it may be observed that cleanliness is by far the most important single factor for the prevention of industrial skin diseases; mainly, cleanliness of person, workroom, machinery and clothing.

Industrial Sanitation

Industrial sanitation and domestic hygiene play a large part in preventing disease and in maintaining good health. Sanitation in factories and industrial premises consist mainly in eliminating dirt when and wherever possible. Cleansing cannot be done effectively by soap and water, so that more thorough measures must be employed. Many other matters have to be considered: the knowledge of what has to be grappled with, the nature of the dirt, the chemical composition of the water available, the type of cleansing material required, and last but not least, the personnel of those who do the cleaning. As a matter of fact, the cleaning of a factory or workshop is not simple but complex; the object is to really eliminate the dirt as far as is possible, and not merely to stir it so that it will settle again in another place.

Domestic Hygiene

Domestic hygiene is of the first importance and should be on somewhat similar lines to industrial sanitation, but, of course, on a more restricted scale. Here again, the prime object is cleanliness as far as possible, which is difficult to achieve in the workmen's house of the present day. In Britain, this is especially true where three-fourths of the population live in overcrowded cities or towns in which dirt and dust are omnipresent, and sometimes carry germs of infection. Many of the women are away in the daytime working, and were it not for women who devote their time to caring for the children and for crëches in which babies and young children are looked after in the absence of their mothers, things in this direction would be worse than they are. Sanitary methods in factories and workshops, and hygiene in homes, is an outstanding phase of preventive medicine, the neglect of which is, perhaps, as serious in Britain as in any civilized country, owing to the congested conditions under which so many of its population live.

Care of the Aged and the Aged in Ill Health

At the representative meeting of the British Medical Association in London, from July 23 to 25th, among other matters the care of the aged and the old in ill health was dealt with at some length. This is a subject which has been ventilated from many angles in medical and lay journals during the past years and especially since the end of the war. The London *Lancet,* February 2nd, had an article on the subject and some disturbing facts were brought forward by the authors. It was shown that the number of people in Britain over the age of sixty-five years was roughly five and three-quarter million, in 1931, seven and one-half million, in 1936, eight and three-quarter million, while the total population in these years was 42,769,196 in 1921, 44,790,485 in 1931 and (estimated) 48,895,000 in 1936. In the *West London Medical Journal* (April 1946) this article was commented on and at the end of the annotation were the following words, "The data given and the experience of the authors of the article in the *Lancet,* four medical men in the Glasgow Medical Service District Medical Officers, lead them to the conclusion that the old and elderly in Britain should have more attention and that schemes and plans to suit each individual should be not only mapped out, but carried out, so that the aged and elderly may end their closing days in comparative comfort."

University College for the West Indies

The Secretary of State of Britain, after considering the report of the West Indies Committee of the Commission on Higher Education in the Colonies, has decided to adopt the committee's recommendation that a West Indian University College should be established in Jamaica. This college will be given the status of a university college and will prepare students for the degrees of the University of London. It has further been decided in agreement with the University of London, that the temporary medical school which the committee recommended in anticipation of a permanent medical faculty of the college, should also be established in Jamaica as an integral part of the college. Dr. T. W. Taylor has been appointed as the principal designate of the college. He had a distinguished career at Brasenose College, Oxford University. When an undergraduate, he went on active service at Gallipoli and France. In 1931, he visited the United States and Canada as a Rhoades Travelling Fellow. In January 1940, Dr. Taylor joined the Royal Engineers and served as a technical officer on the staff at General Headquarters in the Middle East, from July 1940 to October 1942. In 1943, he was released from the army to go to Washington as secretary and later director of the British Commonwealth Scientific Office. In 1944, he relinquished his Washington appointment to become scientific adviser to the Supreme Allied Commander in South East Asia. This work terminated in October 1946, after which he received the C.B.E. He has written many papers on the subject of chemistry, especially stereochemistry.

Book Reviews

Reference Book

Lippincott's Quick Reference Book for Medicine and Surgery. A Clinical, Diagnostic, and Therapeutic Digest of General Medicine, Surgery, and the Specialties, Compiled Systematically from Modern Literature. By GEORGE E. REHBERGER, A.B., M.D. Thirteenth edition. Illustrated. Philadelphia, London and Montreal: J. B. Lippincott Co., 1946. Pp. viii + 1461.

The first edition of this massive tome was published in 1920. Since then, reprintings and revisions have come along every two or three years. This is, of course, necessary because of the rapid progress of medicine in all its branches, and because of the enormous literature in the weekly, monthly and quarterly journals from which most books are derived. The war stimulated much research, a great deal of which has yet to be published because of military exigencies and the necessary time required for distillation of facts and figures. Moreover, those physicians and surgeons who were at, or near the front, could at most, write hurried notes or depend upon some aide to do so; therefore, we may just now begin to reap the results of such experience.

For this edition, the sections on obstetrics, the skin, the eye, the ear, nose and throat, have been rewritten, and as in earlier editions, the daily needs of the general practitioner have been kept foremost in mind. This brings to hand a ready consultant which is terse and to the point. Diagnosis, including differential diagnosis, receives first consideration. Then such methods of treatment as have stood the test of time are set down, and the effort is made to be practical and not fantastic.

There are more than three hundred figures in black and white with a good admixture of colored plates where such are necessary; for example, in mucous membrane and skin lesions. Part II contains an amazing list of drugs with dosages and information about physiological action and chemical derivation. Anyone who can master the details in this book will absorb an extraordinary amount of medicine, but the chief value is, of course, for reference work as the title indicates.

The Human Eye

The Human Eye in Anatomical Transparencies. Explanatory text by PETER C. KRONFELD, M.D., director of education, The Illinois Eye and Ear Infirmary; anatomical transparencies by GLADYS MCHUGH, medical illustrator, University Clinics, The University of Chicago; and historical appendix by STEPHEN L. POLYAK, M.D., professor of anatomy, The University of Chicago. Third printing. Illustrated. Rochester, N.Y.: Bausch & Lomb Press, 1945. Pp. xi + 99.

This is the third printing of this remarkable atlas. The first was published in 1943, the second in May 1944 and the present one in December 1945.

It is comforting to know that this is an authoritative work from the university centers of Northwestern University and the University of Chicago. Both Drs. Kronfeld and Polyak have had extensive experience in the dissecting room, clinic and as teachers of medical students. They have seen to it that the color prints are not merely diagrams, but are a composite from actual drawings of serial sections made through the eye. As for Miss McHugh, she is a product of Johns Hopkins, having studied under the late lamented Max Brödel. Her handiwork is conspicuous for its realism and precise anatomical details. There must be few artists who can ever hope to duplicate the excellence of her amazing work.

This reviewer did not see the 1943 volume and is, therefore, highly rewarded in being able to make the comparison with the recent *Anatomical Transparencies of the Human Ear,* which came off the press in May 1946. This latter work was sponsored by the Sonotone Corporation; while the eye in transparencies was under the aegis of the Bausch and Lomb Company.

One wonders how it ever came to mind, that graphic representations in color could be so faithfully portrayed in three dimensions, by using cellulose acetate! It is a trick which baffles the uninitiate. Here are serial dissections of the eye and orbit, taken anteriorly and laterally at twice the natural size, so that one can study the anatomy, layer by layer. There is no longer an excuse for ignorance of these highly specialized sense organs, understanding of which, has been difficult and which has worried beginners for many years past. Now we have an untiring labor of love, a work of art which combines the beautiful and practical in an uncanny way. All praise to the originators of this great *arbeit* and to those who brought it to completion.

Gastroenterology

Gastroenterology in General Practice. By LOUIS PELNER, M.D., associate attending physician, Greenpoint Hospital, Brooklyn, N.Y.; associate visiting physician, Brooklyn Cancer Institute. With the collaboration of LOUIS A. HELD, M.D., attending roentgenologist Beth Moses Hospital, Brooklyn, N.Y. Illustrated. Springfield, Ill.: Charles C. Thomas, Publishers, 1946. Pp. xii + 285. Price $7.50.

Dr. Pelner is fast becoming recognized as a medical writer of merit. His former books were well received, but this volume is the best to date. The aim of the text is to include the diseases seen by the general practitioner and to present them in a practical, short, easy-to-read fashion. There are many excellent features of this handbook, fifteen condensed tabulations of essential information; diets which are presented in menu form; numerous illustrations; twenty instructive color plates and many x ray cuts which are unusually clear reproductions.

One of the features of this book is the inclusion of helpful hints liberally scattered throughout. For example; "Contrary to the opinion of most physicians, x ray is not the final word in gastroenterological diagnosis. Sigmoidoscopy and gastroscopy will often clear up a case that has been treated as a psychoneurosis for years because of negative x ray findings."

The treatment of all the aspects of peptic ulcer is well done. Detailed diets as well as drugs and the latest experimental data are included. The common

symptom of constipation is adequately evaluated, and the question of liver function tests is well explained with color diagrams as an aid to visual understanding.

The description of the clinical symptoms of gastritis is a bit too sketchy, although the gastroscopic color plates on the subject and the indications and contraindications for the use of the gastroscope are well presented.

A chapter by Dr. Lewitan on compression radiography in the diagnosis of gastric and duodenal ulcer is adequately covered. The author has included the psychosomatic background in gastrointestinal pathology. These chapters are more clearly written than those in most psychiatry textbooks and are highly recommended. This volume is well worth its price, both in knowledge gained and in time saved for the busy general practitioner.

Physiology

The Physiological Basis of Medical Practice. By Charles Herbert Best, professor and head of the department of physiology, director of the Banting-Best department of medical research, University of Toronto; and Norman Burke Taylor, professor of physiology, University of Toronto. Fourth edition. Illustrated. Baltimore: The Williams & Wilkins Co., 1945. Pp. 1169. Price $10.00.

This new edition in the two column foremat makes possible easier reading and scanning of the subject matter. The primary purpose of the book is the interpretation of physiology in terms of functional disorders of the human organism. It offers the best vantage point from which the practitioner may gain a rational view of the physiological process. In each phase of the subject, the author links the laboratory and the clinic bringing modern research into medical practice. This translation of the theories of yesterday into the practice of today, makes for modern medicine. Some of the physiological problems are approached only through animal experimentation, notably those of carbohydrate metabolism, nutrition and endocrinology. Some of the problems are elucidated by direct observations upon man. Both methods require a knowledge of structure before the function of each organ is understood.

The author describes the morphology, nerve and blood supply of each organ before discussing derangements in function. Disease is regarded as an experiment that nature makes on human beings, and signs and symptoms as modifiers of function. Consequently, the modern clinician aims to understand the functional disturbance rather than catalogue diseases and makes diagnoses on an empirical basis. The book stresses the approach of pure science to physiology and inculcates general principles, surveys the function of various tissues, organs and systems and correlates physiological alterations produced experimentally with aberrant manifestations of patients.

Section I interprets blood and lymph in terms of disease. After surveying the functions of the blood, an outline survey of each of the components is evaluated in health and disease. Blood circulation is considered from the standpoint of dynamics, the blood pressure, the physiology of cardiac muscle, the cardiac cycle, the heart sounds, electrocardiography and the vascular system. Respiration is evaluated in terms of mechanistic principles, transport and delivery of oxygen, carriage of carbon dioxide and anoxia. Urinary excretion is evaluated in terms of renal function and disease. Digestion is considered in terms of the various stages from mouth to anus with all the secretions, movements and potentials involved. Through "labelled" elements such as tracers, metabolism and nutrition are discussed for every nutrient in terms of body function and dysfunction. The endocrine section brings the chemical aspects of the subjects to the fore, with stress on the therapeutic value of the newer synthetic products. The section on the nervous system portrays the underlying structures and mechanisms involved in human behavior. The special senses unravel vision, hearing, taste in health and in disease. Every phase of applied physiology is brought up to date with an appended bibliography. This revision has enabled the authors to appraise the facts, statements and illustrated material in order to bring them into conformity with recent discoveries, and thus make a well integrated connected physiological narrative. Some of the newer contributions included are: metabolism of the brain, nerve regeneration, pain sensibility, pyramidal tracts, the electroencephalogram, the adrenal cortex, the anterior pituitary hormones, gonadotropins, thiouracil in Graves' disease, prothrombin deficiencies, action of hemolysins, the Rhesus factor, stored blood, control of leukopoiesis, heart failure, fetal circulation, traumatic shock, the surgery of congenital heart disease, the action of hypertension, chemistry of the muscles, the influence of emotions on digestive functions, liver function tests, chemistry of B-complex, renal dynamics and psychosomatic medicine. These are some of the advances applicable to everyday practice.

Encephalography

The Normal Encephalogram. By Leo M. Davidoff, M.D., professor of clinical neurological surgery, College of Physicians and Surgeons, Columbia University; and Cornelius G. Dyke, M.D., late associate professor of radiology, College of Physicians and Surgeons, Columbia University. Second edition, thoroughly revised. Illustrated with 155 engravings. Philadelphia: Lea & Febiger, 1946. Pp. 232. Price $5.50.

Encephalography was first intended as an aid in the diagnosis of hydrocephalus and brain tumor. Since then, its use has been extended to practically every disease within the intracranial cavity. However, knowledge of the appearance of a normal encephalogram after the injection of gas, is necessary to make a correct interpretation of the encephalogram. The present work includes a description of the technique, indications and contraindications for the performance of the test, as well as the reactions of the patient to the procedure. Actually, the book is an encephalographic anatomy of the living brain and its covering, viewed by means of the contrasting shadows of tissues and gas in the stereoscopic roentgenogram.

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APRIL 1947

Medicolegal Notes

Damages for Aggravation of Dormant Condition

The Arkansas rule is that where a defendant's negligence aggravates or brings into activity a dormant or diseased condition or a condition to which the injured person is predisposed, the defendant will be liable for the full amount of damages sustained, notwithstanding such diseased or weakened condition. Oven vs. Dix, 196 S.W. 2d 913.

Presumption That Violent Death Was Accidental

In an action on the double indemnity provisions of two industrial life policies, it was held that there being evidence tending to prove death as the result of a trauma, the accidental origin of the injuries would be presumed without proof of a mishap. Kindiger vs. Metropolitan Life Ins. Co., Minnesota Supreme Court, 15 N.W. 2d 487. "Given death from violence, without more decision must be that it 'was accidental'." It was therefore held that although deceased's widow was unable to prove when or where her husband sustained the injuries causing his swollen neck, black and blue marks, or scratches observed on his body, such proof was not indispensable in her action on the double indemnity provisions of her husband's industrial life policies. Preexisting disease or infirmity as affecting liability for death benefits under accident insurance policies and accidental features of life insurance policies, has become a fruitful field of litigation ever since these policies were first issued in America at the close of the Civil War. The decisions are legion. The court here followed the leading case of White vs. Standard L. & A. Ins. Co., 95 Minn. 77, 80, 103 N.W. 735, 736, 884, where the court laid down these rules under similar circumstances: "If the injury be the proximate cause of death, the company is liable, but, if an injury and an existing bodily disease or infirmity concur and cooperate to that end, no liability exists. In cases where the insured is afflicted at the time of the accident with some bodily disease, if the accidental injury be of such a nature as to cause death solely and independently of the disease, liability exists."

Whether an accident was the sole cause of the death of an insured suffering from disease, or whether such disease contributed directly or indirectly to the death, was held a question of fact for the jury.

Causal Connection Between Fireman's Hurrying to Answer Fire Call and Coronary Thrombosis

In a proceeding under the New Jersey Workmen's Compensation Act for the death of a member of the volunteer fire department of a municipality, the question for decision was whether his dependents had established by evidence, that his death was the result of an accident, which arose out of and in the course of his employment within the intendment of the New Jersey Workmen's Compensation Act. (R.S. 34: 15-7 *et seq.* N.J. S.A.)

The compensation bureau granted compensation on its finding that the fatality was the consequence of a coronary occlusion arising from the "physical strain, exertion and the general excitement and activity incident" to the decedent's "answering his call of duty." The Court of Common Pleas reversed this award. The New Jersey Supreme Court, Weisenbach vs. Borough of New Milford, 48 A. 2d 802, concurred with the bureau's finding and affirmed its award.

In this case, the deceased hurried to get to a fire in his own car and the fire truck. After the truck had gone nine or ten blocks, it was found he was on the verge of collapse. He was then transferred to another fireman's automobile, to be taken to a physician; he died on the way. He was thirty-eight years old and had apparently been in sound health before the fatal attack.

The Supreme Court held that the evidence led to the inference of an acute coronary occlusion due to a thrombosis as the cause of death; also that a causal relationship between the thrombosis and the deceased's employment as a fireman had been established by a clear preponderance of the evidence. The proofs were held to be "persuasive of physical exertion beyond the ordinary and emotional excitement, in combination, as the reasonable probable source of a coronary thrombosis which occasioned

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the fatal closure of the coronary artery. Quite likely, there was a preexisting arterial impairment arising from disease; but this is not a determinative circumstance, if but for the trauma, the fatal stroke would not have ensued."

The court regarded as unconvincing the opinion of cardiologists for the municipality, who entertained the view that a coronary occlusion cannot result from "undue exertion or excitement", as being contrary to the strongly preponderant scientific view as well as common experience.

Causal Connection Between Blow on the Head and Death Not Shown

A salesman, on a commission basis for a number of employers, covering a territory of his own selection in his own automobile, while opening a truck door to take out samples to show to a customer, was hit on the head by the door of the truck. He sat down and applied cold towels to his head for an hour. He did not lose consciousness. He continued in his employment for two weeks, when he suddenly collapsed while calling on a customer. He was taken to a hospital, where his right arm and leg were found to be paralyzed and he was unable to speak. After continuous treatment in the hospital for a week, he died. Based on the information provided by his widow, the attending physician diagnosed the death as arising from "embolism of a cerebral artery and chronic cardiac valvular disease, rheumatic". The deceased was known to have had a rheumatic heart condition for several years before his death. After his accident he became moody and complained of headaches and dizziness. An autopsy, made a year and a half after death, showed no evidence of lacerations of the head, bleeding or a blow; but an embolic process previous to death did appear.

The testimony for and against the employers' argument that there was no causal connection between the accident with the truck door and his subsequent death, was largely that of experts who had made no personal examination of the decedent. The expert for the decedent's widow, in answer to a hypothetical question including all the facts in the case, stated that in his opinion death resulted from the blow, either by reason of delayed apoplexy or petechial hemorrhages in the brain. The witness admitted that under either theory, a cerebral hemorrhage would occur. Here none had been shown. The autopsy report failed to show that there was a blow to the head, lacerations, or even a fracture.

Five doctors, including the attending physician, testifying for the employers, concurred in the opinion that the cause of death was in no respect related to the blow on the head; and that the immediate cause of death was an embolus which detached itself from the heart and travelled to the brain. The employers' position was supported by the autopsy report, which confirmed the admitted history of an embolic process in the deceased, previous to death. The deceased's medical history also supported that theory, "inasmuch as three years before the alleged accident", the court said, "the decedent was turned down for life insurance because of a murmur of the heart, and at the time of death was known to be suffering from a chronic rheumatic heart condition".

It was held that, under this testimony and an independent determination by the Appellate Court of the facts and law of the case, the plaintiff had not sustained the burden of proving the causal relationship between the blow to the deceased's head and subsequent death. "The law places the burden of proof on the party seeking compensation, and it is not sustained unless the evidence preponderates in favor of the tendered hypothesis. Mere conjecture or pure surmise cannot be the basis of judgment. The evidence produced by respondent does no more than establish a possibility that death occurred as contended and therefore fails to meet the standard required for recovery".

A judgment of Common Pleas reversing a denial of the claim by the Workmen's Compensation Bureau was therefore reversed restoring the bureau's determination. Globerman vs. Lewis Steel Products Corporation, New Jersey Supreme Court, 48 A. 2d 795.

Damages

The allowance of $8,200 for personal injuries to a pedestrian struck by an automobile, while considered liberal in the circumstances, was sustained by the Wisconsin Supreme Court, in Kleiner vs. Johnson, 23 N. W. 2d 467, as against the claim that the plaintiff had sustained some bodily injury prior to the time the defendant ran over him; so that this could not be segregated from the injuries inflicted by the defendant. The court said: "We think that the jury might rightly infer from the evidence that the unconsciousness of the plaintiff was caused by the plaintiff's falling in the street and striking his head upon the street surface; that this injury was comparatively slight, and that practically all the plaintiff's bodily condition resulted from the injuries inflicted by the defendant's automobile. The plaintiff experienced but little headache at the hospital and has experienced none since leaving. Blows on the head that cause unconsciousness for a time, are often of no serious consequence, as a matter of common knowledge."

Belief in Nonserious Nature of Injury as Excuse for Delay in Filing Claim

In Texas, the law is well established that a claimant's *bona fide* belief that his injuries are not serious, is sufficient to constitute good cause for delay in filing his claim beyond the time limited by statute (in Texas six months). The Texas courts have frequently held that the advice of a physician to the effect that injuries sustained are not of a serious nature but are temporary and trivial, is sufficient to show good cause for the delay in filing a claim, where it is shown that the claimant believed and relied on the physician's statements. Martin vs. Travelers Ins. Co., 196 S.W. 2d 544.

Westinghouse Grand Science Scholarships

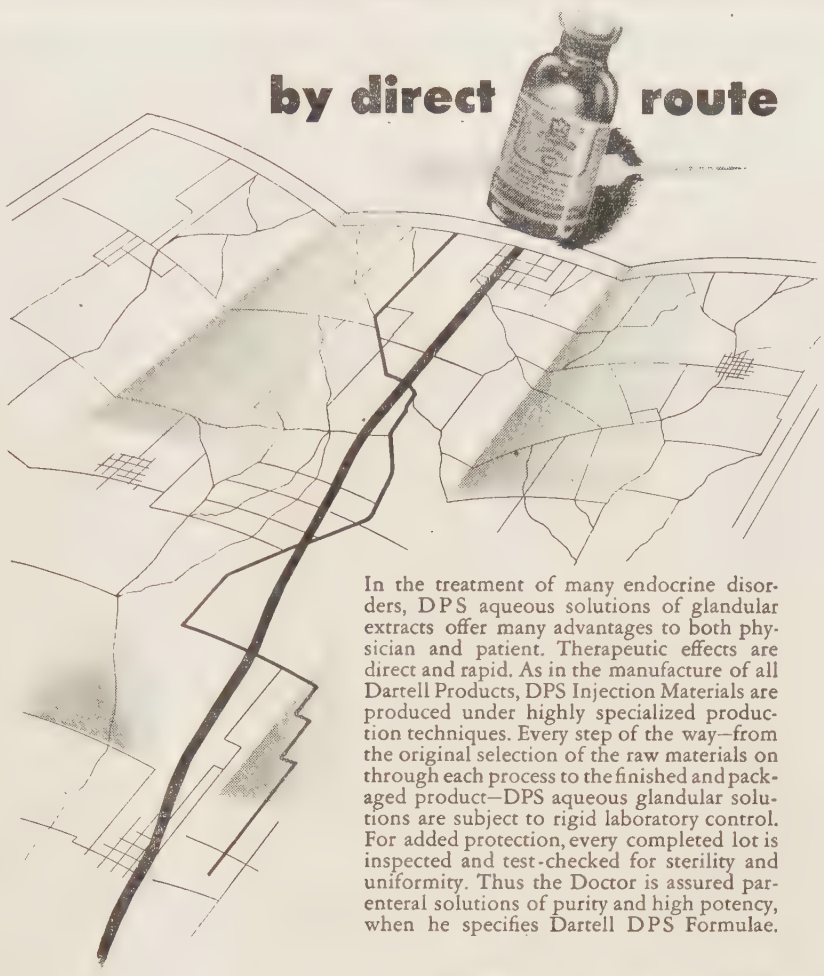
A boy from Massachusetts and a girl from Long Island, who at the age of sixteen have already attained recognition for their work in ornithology and genetics, received the top $2400 Westinghouse Grand Science Scholarships at the awards banquet closing the five-day Science Talent Institute in Washington, D. C. They are Martin Karplus of West Newton, Mass., and Vera Radoslava Demerec, of Cold Spring Harbor, N. Y.

Eight of the forty finalists from fifteen states and the District of Columbia, who were competing for $11,000 in Westinghouse Science Scholarships, were awarded $400, four-year scholarships, and two of these—a boy and a girl—were named alternates for the Grand Science Scholarships.

The John Taylor Hopkins IV Award of $100 went to Gustavus James Simmons of Charleston, W. Va. It consists of the unused Westinghouse Science Scholarship won in 1946 by Mr. Hopkins, of Washington, D. C., who was killed by lightning last August before he could make use of the scholarship. The award was granted at the request of the boy's mother, Mrs. Agnes Hopkins.

Watson Davis, director of the science service, presided at the banquet and the scholarship awards were made by Dr. Harlow Shapley, director of the Harvard College Observatory and chairman of the board of judges of the science talent search. Gwilym A. Price, president of the Westinghouse Electric Cor-

(*Continued on page* 249)



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Nationwide Expansion of Cancer Control

The Public Health Cancer Association, the only national organization of professional workers in both voluntary and official cancer control programs, has drafted a set of recommendations designed to achieve the greatest possible expansion of cancer control activities throughout the country, according to *Health News,* 24:3, 1947.

Heading the list of recommendations as announced by Dr. Morton L. Levin, director of the division of cancer control, New York State Department of Health, and also president of the association, is one suggesting the formation of a National Cancer Control Advisory Committee representing the American Medical Association, American Cancer Society, United States Public Health Service, the Public Health Cancer Association, and other national agencies whose chief interest is cancer control. The function of this committee would be to help achieve integration and cooperation among the national organizations now active in this field. The association recommends further the establishment of similar committees in each state and in each community having an organized program.

Other proposals call for the organization within each state department of health, of an official cancer control program under the direction of qualified full-time administrative personnel; establishment by the official agency in each state of a system of confidential cancer morbidity reporting, case registration, and follow-up; and increased provision by schools of public health for the training of cancer control administrative officers.

As a corollary to these recommendations, the association points to the importance of thorough and complete periodic health examinations of apparently well persons by private physicians, or in specially designated clinics as an effective means of cancer prevention and control, and to the present great needs for the care of advanced cancer patients. Since the resources of official health agencies are usually inadequate to meet these needs, the association recommends that the funds of nonofficial agencies be made fully available for this humanitarian purpose. It stresses the important role of voluntary cancer agencies in supplementing official cancer control programs, in stimulating and supporting the development of complete and continuing control programs, and in carrying on demonstration and experimental projects which may serve as guides to the later development of corresponding official control activities.

Commending the American Cancer Society and the United States Public Health Service for their support of cancer control activities and cancer research throughout the country, the association urges that the program of the latter organization in providing guidance and funds for state cancer control work be continued and expanded. Concurrent with this expansion, it recommends the greatest possible extension of the programs of both agencies in fundamental and applied cancer research.

poration, told the young scientists that in the six science talent searches, 240 young people have now received Westinghouse Science Scholarships, while another 1560 have won honorable mention. This procession, he said, is a growing army of capable people emerging from this competition to take over the staggering task of scientific progress. In an address, "The Scientific Way," Dr. Vannevar Bush, president of the Carnegie Institution of Washington, warned the young scientists that a career in science is "just plain hard work."

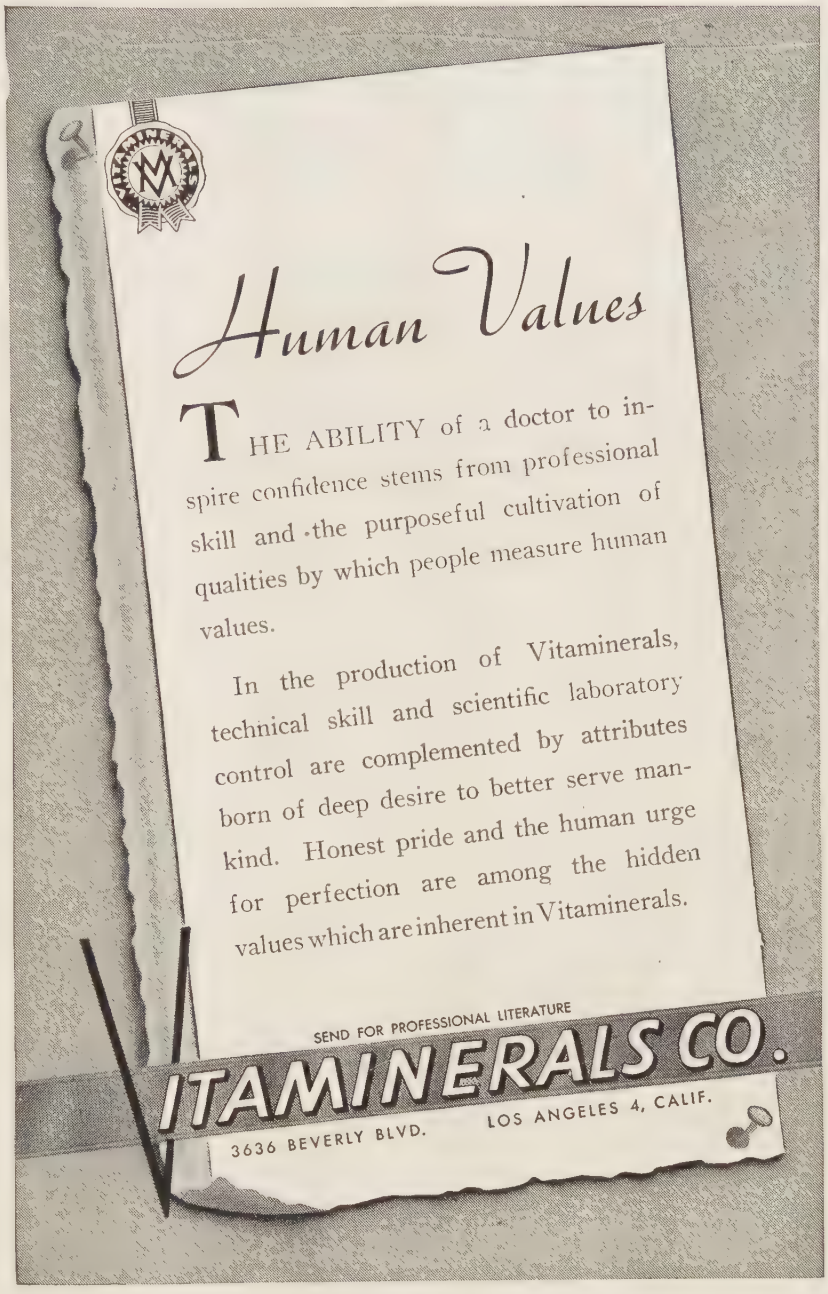
The science talent search is sponsored by the Westinghouse Educational Foundation, which is maintained by the Westinghouse Electric Corporation. The search is conducted by science service, through the science clubs of America.

Prevalence of Alcoholism Related to War

"Alcoholic psychoses may be related to the existence of a state of war," stated Dr. Benjamin Malzberg, director of the statistical bureau of the Department of Mental Hygiene, speaking before the February bimonthly conference of the directors of New York State's mental institutions.

"In spite of the continued growth of the state's general population," continued Dr. Malzberg, "there was a decrease in the number of first admissions with alcoholic psychoses to New York civic state hospitals from 1909 to 1920. After 1920, however, the rate climbed

(*Continued on page* 251)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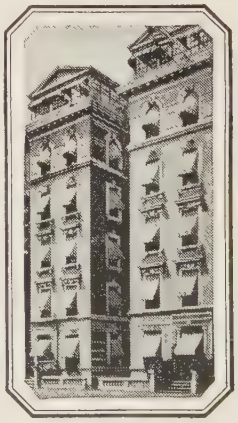

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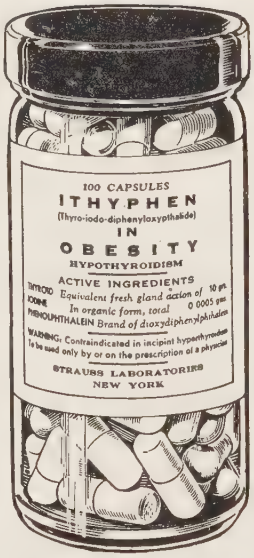

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New Tropical Disease Institute

Dr. Thomas T. Mackie, president of the American Foundation for Tropical Medicine, speaking at the foundation's fifth annual dinner, announced that arrangements with the Liberian government for the establishment of a research center which will offer "practically ideal conditions for the study of tropical diseases", have been concluded.

Dr. Mackie said that the construction of the $250,000 Liberian Institute of the American Foundation for Tropical Medicine will be started this year. Developed to provide suitable laboratories for the investigation of many problems of tropical medicine and agriculture, the Institute's program will be directed by a scientific committee consisting of representatives from seventeen universities, the Army and Navy medical services, the U. S. Public Health Service and industrial organizations with a direct interest in tropical medicine.

The Institute, a gift from Harvey S. Firestone, Jr., as a memorial to his late father, will be erected on a one hundred acre site adjoining Roberts Field, the international airport of West Africa. This land, together with an additional six hundred acres of choice farming land for research in tropical agriculture and animal husbandry, is a tax-free gift from the Liberian Government. Further government cooperation is assured by an agreement which permits the institute's scientists to carry out any studies they deem necessary, even to the extent of placing certain areas of the country in quarantine, if justified, for research purposes.

Based upon reciprocal agreements with foreign centers of education and research, the facilities of the Institute will be available to the health section of the United Nations, as well as to visiting scientists and graduate students, without restriction to nationality, race or creed. All research findings will be available to all who are interested.

In an explanation of the aims of the institute to American industrialists, whose financial support is needed for long term operation, Dr. Mackie said: "The Liberian Institute should become an international center for research into the medical and related problems of the tropics. It should attract the most able investigators of many lands. The opportunity for free exchange of information among individual scientists working together on related problems, provides a mechanism for the development of new techniques and their rapid evaluation as effective instruments for the treatment or control of diseases."

A campaign for $250,000 for the first year's operating expenses is now being sought by the foundation, whose headquarters are located at 270 Madison Avenue, New York 16, N. Y. Founded seven years ago, the foundation has made grants to various medical schools for undergraduate studies in tropical medicine and sponsored a field investigation of African sleeping sickness in Liberia. It is working toward the establishment of a full scale graduate school for tropical medicine in this country, open to all students to provide fully trained physicians for the Army, Navy and foreign economic development.

year by year until 1941 when it was the highest ever recorded in New York State. For the three-year period ended June 30, 1941 the average annual rate of first admissions with alcoholic psychoses was 7.8 per 100,000 general population."

Since 1941 the rate has again declined; during the fiscal year ended March 31, 1944 there was an estimated annual rate of 4.9 first admissions with alcoholic psychoses per 100,000. It therefore appears that the rate of first admissions decreased during the war.

A similar decrease was noted during World War I, but at that time there were limitations upon the manufacture and sale of intoxicating liquors which might have explained the reduction in alcoholic psychoses. During World War II, however, there were no such restrictions. Consequently there is some reason for believing that an influence generated by preparation for and the conduct of war may at least temporarily cause less drinking of a kind and degree which results in a psychosis.

Dr. Malzberg added that there is a possibility that the rate of first admissions with alcoholic psychoses is related to business trends; and that it is probable that the prevalence of the alcoholic psychoses, as of all mental illness, is reduced during periods of prosperity and increased during a period of depression.

"Whether this is a complete explanation of the changing trends in the prevalence of the alcoholic psychoses," continued Dr. Malzberg, "cannot be asserted with finality."

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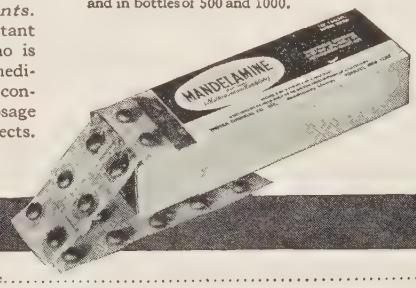

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Social Welfare and Health

The following is a portion of the message delivered by the New York governor, Thomas E. Dewey, to the state legislature regarding New York's social welfare and health.

"New York State began 1947 with a new public welfare system.

In place of a patchwork of complexity and duplication, we shall have a simplified and coordinated system. For the first time, all of our sick and our needy will be served promptly and directly through a single, convenient local office. Investigations of all family needs, for all types of assistance and service, will be made by one agency, not several. Instead of a variety there will be a uniform standard of assistance and care within the individual county.

At the same time the localities' share of the expenditures was stabilized and reduced to not more than 20 percent of the cost in the fields of home relief, old age assistance, aid to dependent children and assistance to the blind. Moreover, the costly, antiquated settlement system of determining locally the state and local responsibilities for welfare costs is abolished. Such costs are now determined on a simple human residence basis. These are complex changes and we will all watch, with great interest, their success in operation.

Commencing January 1st the state was fully launched upon its expanded program for the eradication of tuberculosis and the granting of state aid of not less than 50 percent for all the public health services conducted by the local units of government. These programs, which involve an added annual expenditure by the state of more than ten million dollars, constitute the broadest extension of public health services in the state since the beginning of the century.

The war years have been a period of extreme emergency for our Department of Mental Hygiene, which ministers to more than 92,000 patients in its twenty-six institutions. We have sorely lacked personnel, supplies, equipment and even maintenance replacements, and many of our hospitals have been overcrowded. In the face of all these difficulties, it was necessary to keep each ward functioning throughout the twenty-four hours of every day. This in itself was a great achievement.

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Frederick W. Seward, M.D., Director Frederick T. Seward, M.D., Resident Physician Clarence A. Potter, M.D., Resident Physician

Partly as an outcome of the period of war-born stress, the mental hospitals of the country, during the past year, have become a target of wide-spread public criticism. Little has been said against our New York State hospitals by responsible people, but we do know where and how we can effect improvement. We have already started.

We are well on the way toward making the great stride from the mere custodial care of the past to genuine individual treatment of every patient in our state mental hospitals.

To illustrate, let me point out that to care for the mentally ill we first need psychiatrists. The nation-wide lack of these specialists came to public attention when the Selective Service procedure began to function. Early in my first term we laid plans to meet this fundamental need, and almost a year ago one of these projects came to life—a formal training course in psychiatry, started at Syracuse and New York, for young physicians who then had begun to return from military service. Almost one hundred are enrolled. Comparable courses for senior physicians, nurses, social workers, cooks, attendants, and other personnel, are either being expanded, inaugurated or devised.

You are familiar with the tremendous building program for this department which will get under way as soon as construction is possible. This program is designed to do away with overcrowding, to replace antiquated buildings, and to afford living quarters suitable for the care of the various types of the mentally ill.

More than that, these reconstructed institutions will provide the physical facilities needed by the trained, augmented staffs, to give our patients the best possible care and new hope for the future.

The last session of the Legislature appointed a joint committee to study the subject of cerebral palsy, and the committee will report at this session.

Cerebral palsy involves loss of muscular control, resulting from injury to the brain, usually at birth. In many cases, it leaves its victim, who may be perfectly normal mentally, so handicapped physically that he is often mistakenly thought to be mentally affected and his whole life is blighted. The situation for the victims of this disease and of their families is often tragic and the present facilities for research, diagnosis and treatment in this field are inadequate.

Despite inadequate facilities, medical science has made great progress in the field and it is now known that for a large percentage of these victims much greater hope exists than was thought possible only a few years ago.

Means must be devised to stimulate the specialized training of physicians, nurses, teachers, and therapists for service in the field of cerebral palsy. Accordingly, it seems to be an appropriate function of the state to assist in providing a center where skills can be developed which will be useful generally.

At least one center should be made available immediately at which, in addition to specialized diagnosis and treatment, there will be a source of continuing research in this relatively new field."

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Pure Diphtheria Toxoid

Pure diphtheria toxoid, an ounce of which will protect 400,000 persons against diphtheria, without any "side reaction", has been isolated at the Institute of Pathology, Western Reserve University, Cleveland, Ohio.

One of the purposes of the isolation of the toxoid is its intended use as a means of a more effective protection against diphtheria among persons of all ages, as well as young children. This is the second bacterial toxoid which has been isolated in recent months at the Institute of Pathology, under the direction of Dr. Louis Pillemer, associate professor of immunochemistry. The toxin of tetanus or lockjaw was also recently isolated and crystallized at the Western Reserve Institute, and that of botulism or food poisoning, by U. S. Army chemists at Camp Detrick, Md.

The diphtheria toxoid was purified by Dr. Pillemer, with the assistance of David Toll, George W. Crile Fellow in Pathology at the Reserve School of Medicine. Dr. Pillemer said that it is necessary to use one hundred and twenty-five gallons of crude, culture medium of bacteria, under carefully controlled laboratory technique, in order to obtain an ounce of the material.

Discussing the advantages of the new purified toxoid, pediatricians at the university pointed out that the use of the crude diphtheria toxoid in its present unrefined form, can be used without side reactions only in very young children. Present evidence indicates that the purified toxoid can be used regardless of the age of the individual.

Side reactions occur when unpurified tetanus toxoid is used as a protection against lockjaw. Purification will now permit the use of both these toxoids at any age, and of both toxoids at the same time in order to minimize the inconvenience of extra injections.

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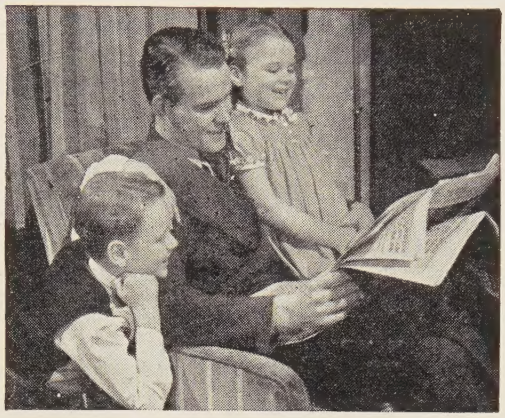

2. **Plans for the future!** "Ten years from now, the money I'll get for my U.S. Bonds will help to send my kids to college, or buy our family a new home."

3. **Rainy day!** "Maybe a rainy day's coming for me. Maybe it isn't. But I am taking no chances. That's why I'm buying all the U.S. Bonds I can through my Payroll Savings Plan."

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Pro-Aminate

The pharmaceutical and research laboratories of Schieffelin & Co., New York, N. Y., have introduced a new product called Pro-Aminate for oral administration in cases of known or suspected hypoproteinemia. Pro-Aminate is a protein hydrolysate containing the essential amino acids, peptides and natural B-Complex factors common to nutritional yeast which is characterized by its pleasant taste and has a total protein equivalent of 51 percent. The prescribed dosage is one to four tablespoonfuls three to four times daily, in a cupful of hot water, vegetable pieces or soups or as recommended by the physician. Each ounce of Pro-Aminate contains: total nitrogen 2.3 Gm.; amino nitrogen 0.88 Gm.; chlorides 3.7 Gm.; ether extractables 0.65 Gm.; carbohydrates 6.5 Gm.; ash 5.2 Gm.; thiamin 2.12 mg. (2.12 minimum daily requirement); riboflavin 0.85 mg. (0.42 minimum daily requirement); niacin 7.08 mg. (minimum daily requirement not established).

Pro-Aminate is available in 10½ oz. jars (298 gm.).

Progest-E

The National Drug Company of Philadelphia, Pa., manufacturers of pharmaceuticals, biologicals and biochemicals, have recently announced a new addition to their line—Progest-E—containing two valuable therapeutic agents, progesterone and vitamin E, in one preparation.

Progest-E is available in two sizes, 1 cc. and 5 cc. A sterile solution in a 1 cc. ampul contains: alpha tocopherol (vitamin E), 50 mg.; progesterone, 1 mg.; in corn oil. The 5 cc. injectosol (multiple dose vial) is a sterile solution containing: alpha tocopherol, 100 mg.; progesterone, 5 mg.; with 3 percent chlorobutanol; in each cc. of corn oil.

The important feature of this new product, Progest-E, is to have available in one preparation two valuable therapeutic agents, each of these components having been found effective in cases of threatened and habitual abortion. Progesterone and vitamin E individually, have also been found to be of value in the treatment of various reproductive and obstetrical disorders.

Progest-E is indicated in cases of habitual and threatened abortion or premature labor, and in certain cases of dysmenorrhea, menorrhagia and metrorrhagia. It is also of value in other conditions in which a deficiency of progesterone or vitamin E may be one of the etiological factors, as for the relief of afterpains, in functional sterility, in preeclamptic toxemia, in premature detachment of the placenta and in cases of premenstrual tension.

Progest-E should be administered intramuscularly, deep into the gluteal region. In cases of habitual or recurrent abortion, as soon as the diagnosis of pregnancy is made, 1 ampul or ½ to 1 cc. of the injectosol, should be administered two or three times weekly and continued until the danger of abortion has passed (which should be about one month after the customary time of abortion; the medication should not be continued beyond the 7th or 8th month of pregnancy). When abortion or premature labor is threatened, the patient should be confined to bed and administered 1 cc. of the injectosol once or twice daily until the danger of abortion has passed. Smaller doses, at intervals of from two to three days should be continued for an additional period of one to two months.

In cases of dysmenorrhea, 1 ampul Progest-E should be administered daily, beginning from four to six days before the onset of menstruation; or administered 1 cc. ampul daily, starting three days before the anticipated period and 1 cc. of the injectosol morning and evening on the day preceding and if necessary also on the first day of menstruation.

In cases of functional menorrhagia, 1 cc. of the injectosol should be administered daily, several days preceding the anticipated period of menstruation. During metrorrhagic bleeding, 1 cc. of the injectosol should be administered once or twice daily.

In functional sterility, 1 ampul daily or on alternate days throughout the second half of intermenstrual interval should be administered; treatment should be discontinued when menstruation begins.

Ampul Progest-E, 1 cc., containing a sterile solution of alpha tecopherol, 50 mg.; progesterone 1 mg.; in corn oil is supplied in boxes of 6, 12 and 25.

Injectosol (multiple dose vial), Progest-E, 5 cc., containing a sterile solution of alpha tocopherol, 100 mg.; progesterone, 5 mg.; with 3 percent chlorobutanol (chloroform derivative); in each cc. of corn oil is also available.

Nidoxital

Nidoxital, a new preparation for the control of nausea and vomiting of pregnancy, has been introduced by The Ortho Pharmaceutical Corporation of Raritan, N. J. Clinical evidence of its efficacy is reviewed in a booklet published by the company and which is available to the profession.

Nidoxital is composed of the following five drugs, combined additively into a sugar coated tablet for oral use: Benzocaine, 100 mg.; Pyrodoxine hydrochloride, 50 mg.; Nicotinamide, 25 mg.; d_l Methionine, 100 mg., and Pentobarbital sodium, 15 mg.

The recommended dosage is one tablet, taken orally thirty to forty-five minutes before meals. In more severe cases, one tablet should be taken every forty-five minutes for three doses, the series to be repeated within four hours or as indicated, up to ten tablets per day. The company states that no side reactions to nidoxital have been reported, but calls attention to the fact that a patient may have a sensitivity to one of the drugs present.

Nidoxital is supplied in boxes containing four cellophane strips of six tablets each. It is available on prescription only.

WHEN HYPOTENSIVE THERAPY IS INDICATED . . . .

HEPVISC, a synergistic combination of hexanitrate of mannitol with viscum album, is a safe and effective agent for bringing about:

1. **A sustained reduction in blood pressure.**
2. **Relief from subjective symptoms.**

For optimum results the action of a hypotensive drug should be gradual and prolonged. The fall in blood pressure produced by Hepvisc begins from fifteen to thirty minutes after administration, reaches its maximum in from one to two hours, and persists for from four to six hours.

The effectiveness of Hepvisc in controlling the headache, dizziness, tinnitus and other cerebral symptoms of hypertension is particularly gratifying to many patients.

Dosage: 2 tablets three or four times daily as needed.

Supplied in bottles of 50 tablets, 500's and 1000's.

HEPVISC

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CRYSTALLINE PENICILLIN SODIUM

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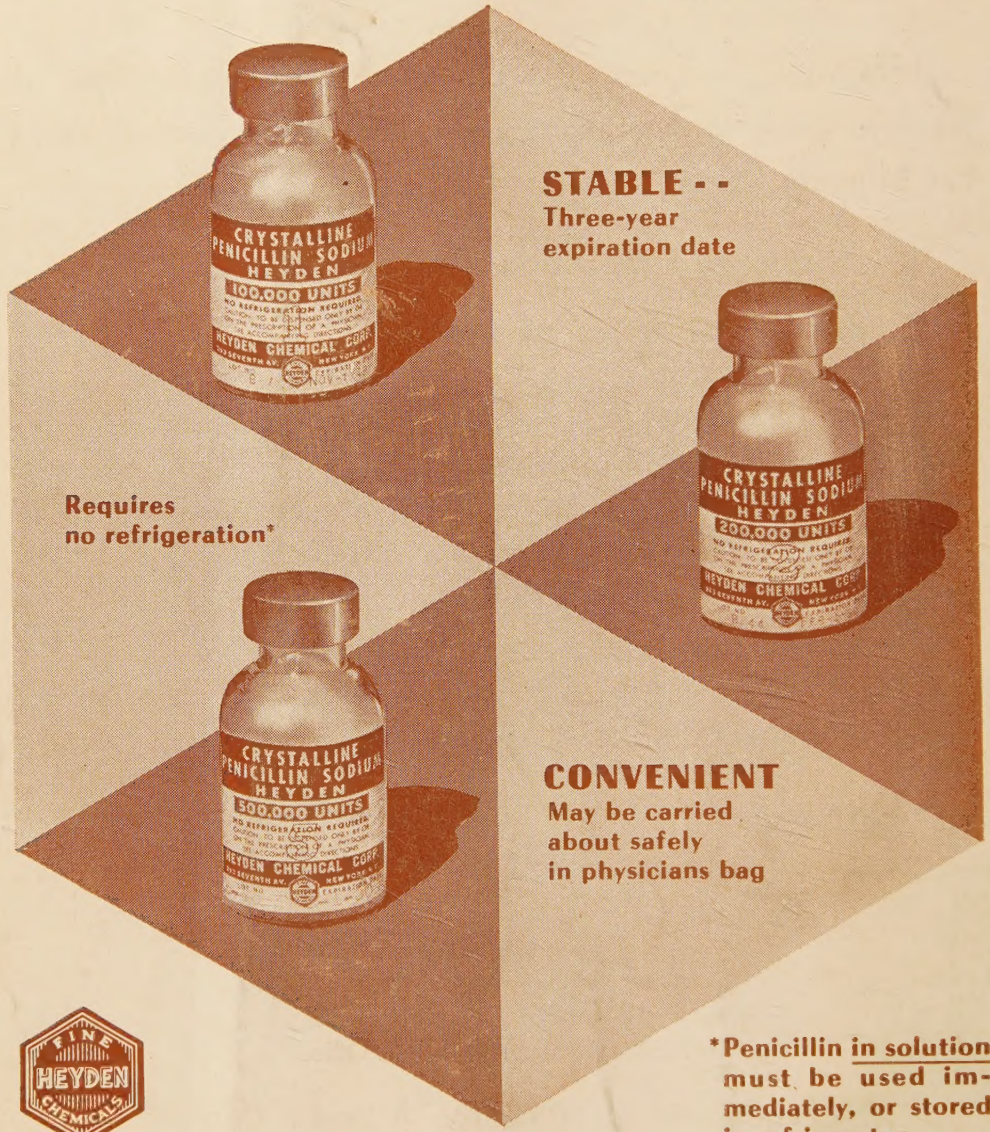

STABLE - -
Three-year expiration date

Requires no refrigeration*

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May be carried about safely in physicians bag

FINE HEYDEN CHEMICALS

*Penicillin in solution must be used immediately, or stored in refrigerator.

HEYDEN CHEMICAL CORPORATION

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